Deloitte & Touche

Province of Manitoba Financial Review

Information Technology Major Initiatives Review

Prepared for the Financial Review Steering Committee

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Final Report

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EXECUTIVE REPORT

INTRODUCTION

On October 18, 1999, Manitoba Finance issued a Request for Proposal on a financial review of the Government of Manitoba. The review was to be conducted in two phases:

> Phase I: to estimate those obligations which the Government of Manitoba must meet for fiscal 1999/2000, the revenues it will have available to do so, and the impact the findings for the current fiscal year will have on the two subsequent fiscal years.
>
> Phase II: to examine the processes by which budgets are developed, to make recommendations on how to improve the accuracy of future budgets and improve the control of expenditures.

An information technology review is part of Phase II and is a high level review of the Province's five major information system investments.

Since 1995, the Province of Manitoba has made major financial commitments to Information Management and Information Technology (IT). The five initiatives, which were reviewed, represent over $500 million in plans and financial commitments. These five projects are highlighted in Table 1 below:

Table 1 - Major IT Initiatives

Major Information Technology Initiatives	
Year 2000 Project	To minimize the impact of Year 2000 computer problems on the Province of Manitoba.
Desktop Management Project	To deploy the infrastructure and to provide a uniform, ongoing service to manage the Province's desktop computing resources.
Better Systems Initiative (BSI) Project	To create new, computer-based ways to obtain government services and to automate service delivery/administrative practices
Health Information Network (HIN) Project	To electronically connect hospitals, pharmacies, diagnostic facilities, and other authorized health professionals for secure access to important information such as medication history and test results, regardless of where in the province patients present themselves for treatment.
Better Methods Initiative Project	To implement the SAP software computer applications to meet the Province's financial and human services requirements.

Our review was limited in scope and most of the execution took place over a four week period. Our review was not an audit, nor did we conduct an examination of the quality of the deliverables from all the projects, e.g., documentation, software, system functionality, etc., and we can offer no opinion in this regard. Within the time constraints imposed by the review, we have made the assumption that the information provided to us, through documentation and interviews, was accurate, timely and complete. Three of the projects under review were evolving; therefore, our findings represent a snapshot as of December 1999.

At the time of our review these initiatives ranged from projects essentially completed, to those being re-evaluated. Table 2 sets out the financial status.

Table 2 - Financial Status (000's)

	Year 2000	Desktop	Better Systems	HIN	Better Methods
Current Plan and Commitments	$70,000	$118,700	$123,000	$15,000 to $29,500[1]	$56,000
Projected Future Investments	To Complete $(4,000) under budget	$77,800	$68,000	To be determined[2]	To be determined[3]
On-going Costs	NO	YES	YES	To be determined	YES

[1] At a minimum, the HIN budget above is $15 million of completed work. There is an amending agreement, with a value of another $14-18 million, which is awaiting the Government's consideration.

[2] Estimates to complete the delivery of the HIN are not currently available. Such estimates should be based on a revised vision and delivery strategy.

[3] Better Methods is in the midst of a comprehensive, detailed assessment of the budget needed to complete the project. At this time the best estimates include some portion of the ongoing operating costs to be used for implementing deferred functionality, and for major upgrades to software, hardware, archiving and data warehouse applications.

OVERALL CONCLUSIONS

Our analysis found that the success of the five projects varied widely from very good to quite poor. Two projects (Year 2000 and Desktop) were well managed. One project (the Health Information Network initiative) was very poorly managed. Of the two remaining projects, one (Better Systems) should be completely examined to ensure it can provide the expected benefits. The last project (Better Methods) was well managed on its implementation but now requires re-direction and management commitments before moving to its next phase. Table 3 summarizes our conclusions.

Table 3 - Overall Findings and Observations

	Year 2000	Desktop	Better Systems	Health Information	Better Methods
Start Date	1997	1997	1997	1995	1995
Initiation	Very Good	Very Good	Good	Poor	Very Good
Planning	Very Good	Very Good	Poor	Very Poor	Very Good
Execution	Very Good	Good	Poor	Very Poor	Good and Poor[4]
Close-out	2000	2000	To be determined	2000 Recommended	On-going

We reached the following conclusions on the major phases of these initiatives:

- *Project Initiation:* the government seems to be effective in defining and formulating project visions.
- *Project Planning:* the government seems to have mixed success in defining the strategy(s) and in planning the project(s) required for delivering the visions.

[4] Better Methods has two main components; one was considerably more successful than the other. Execution performance could be considered "good" in areas such as the application of sound project management techniques, in delivering a government-wide Year 2000-compliant and functional system by April 1999, in developing Manitoba staff with new computer and accounting skills, and achieving improvements in government administrative processes. Execution performance to date could be considered "poor" in the areas of estimating project time and effort and system capacity requirements, in managing user expectations, in providing sufficient user preparation and training, and in establishing a successful framework for post-implementation application management.

- *Project Execution:* the government was not effective in executing project plans. In particular, the government seems to have a weak track record in managing vendors, particularly within the context of single-vendor environments and large/complex IT projects. In addition, the government is not effective in controlling and tracking budgets and costs within these large IT projects. Specifically, the government seems to have no standard and universally accepted approach to the definition and calculation of internal and external costs.

- *Project Closeout and Wrap-up:* Three of the five projects under evaluation are not yet completed. Two others are in the final stages now. Therefore, project closeout activities have not yet been initiated. The Desktop Management Project is currently preparing for a post-completion review, which will constitute a project closeout and wrap-up. Given that the future direction of the BSI initiative is currently being re-defined, it is not clear when a formal, independent project evaluation will be completed. The HIN initiative is all but stopped; it is unclear whether another review in addition to our review will be warranted.

One of the significant observations of this review is the lack of clarity on the financial plans and results. The review team encountered substantial inconsistencies and confusion on planned costs, incurred expenses, levels of internal government staff costs, etc. It is likely indicative of poor cost planning, control and budget management. Also, we observed that Government has been inconsistent in defining, formalizing and managing the anticipated service and financial benefits to be derived from some technology investments.

Management of complex IT projects and large-scale IT programs are very difficult. Our observation is that those projects which were tightly controlled in the pursuit of explicit objectives by senior officials in the central agencies of the Manitoba government were more successful. This type of involvement or oversight should be considered as necessary for the Government's future large-scale IT investments.

Some of the costs were expensed as the project progressed; other expenditures were capitalized. Based on the information in this report, the Government will need to review its IT investments and consider appropriate write-off provisions on a project-by-project basis. We believe that the provisions in the range of $40-45 million should be made in respect of two projects, namely Better Systems ($9 - $10 million) and Health Information Network ($31 - $35 million).

SPECIFIC EVALUATIONS

YEAR 2000 INITIATIVE

Business Direction	The Year 2000 Initiative was clearly aligned with the government's overall direction, with the primary objective of reaching government-wide Year 2000 compliance.
Accountabilities	The Year 2000 Project Office had clear accountabilities and project structure.
Integrated Project Management	The Year 2000 project had a clear scope and good time, cost and quality management.
Risk Management	The Year 2000 project was based on a clear methodology, with regular project reviews.

DESKTOP MANAGEMENT INITIATIVE

Business Direction	This initiative contributed significantly to the Year 2000 readiness of the Manitoba government by replacing non-Year 2000 compliant equipment. In addition, the Desktop Management project was to be the foundation of the government-wide infrastructure initiative – a necessary component for the improvement and enhancement of services to Manitobans. Indeed, prior to this initiative, there was no government-wide internal network.
Accountabilities	The project governance was clearly defined, with effective project communication channels.
Integrated Project Management	The Desktop Management project had a well defined scope, time and budget management processes. The project was well understood by both government and the vendor, which resulted in clarity in the identification and resolution of issues.
Risk Management	Although there was a risk management plan, we found little evidence of risk management practices commensurate with the size and complexity of the project. However, the experience and competence of the government and the vendor teams resulted in generally successful project delivery.

BETTER SYSTEMS INITIATIVE (BSI)

Business Direction	The Manitoba government established BSI to assist in meeting changing citizen needs and expectations for service by providing information technology tools and applications relating to both core services and integrated case management. As such, the BSI fits within the thrust to renew service delivery to Manitobans.
Accountabilities	Until recently, the BSI project structure and governance seemed to be unclear. BSI is undergoing re-vectoring (change in direction) and re-planning. To date, a revised project management structure is in place; overall governance is still under review.
Integrated Project Management	Initially, the BSI project had a clear vision statement with well-defined sub-components. However, in project execution the initiative suffered from difficulties in business re-engineering, over-emphasis on analyzing the historical situations, and some ineffective project management.
Risk Management	The project needs to define a careful risk management process, with periodic reviews where adjustments to the project schedule, budget and scope can be made. The current re-vectoring of the project, with its multi-releases concept, will provide for more manageable project delivery. This will contribute to minimizing and managing the project risks.

HEALTH INFORMATION NETWORK INITIATIVE (HIN)

Business Direction	When first initiated, in 1995, the HIN vision was conceptually innovative - to electronically connect the health care providers of Manitoba so that they could exchange clinical and administrative information, and perform assessments of program effectiveness based on empirical data in order to improve health outcomes. However, changes in health information technology since the initiation of the HIN call the initiative into question. To remain sound, the vision and strategy needed to be revisited to include current directions in the health sector, such as new technologies and the advent of the Regional Health Authorities.
Accountabilities	The project has been on-going for more than four years, and the government's Executive Director position was unfilled three years, resulting in lack of direction and focus within the project.
Integrated Project Management	The initiative had a clear vision. However the "roadmap" to deliver the vision was not well defined. As a result, it seems that the project developed a number of isolated components, without a clear understanding of their contributions to the overall vision.
Risk Management	The health sector is dynamic and ever changing. In order to meet its objectives, any health information network needs to adjust and adapt to changing needs. It appears that this initiative did not have this approach. For this reason, the HIN needed a risk management process, with periodic reviews and a flexible adjustment mechanism.

BETTER METHODS INITIATIVE

Business Direction	Manitoba launched Better Methods in 1995 with the goals of re-designing business processes and systems to improve civil service efficiency and effectiveness, reducing paper flows, and concurrently addressing Year 2000 limitations on several of the government's central automated administrative systems.
Accountabilities	The project benefited from a streamlined governance structure that was formally defined, and included cross-representation from many levels of government.
Integrated Project Management	The project had a well-defined approach. This included strong project leadership and sponsorship, training as an investment, and the management of communications. It anticipated the need for changes to existing regulatory, organizational and policy frameworks. The project took into account the need for managing and measuring performance and for formal risk management.
Risk Management	

Note: Deloitte and Touche had a significant involvement in this project. Therefore the review of this initiative was conducted by an independent firm: G. Braha & Associates Ltd.

RECOMMENDATIONS

Year 2000 Initiative

The Year 2000 project has had a very good track record. It is planning closure within 60-90 days. We concur with this plan.

The Year 2000 project developed and implemented a streamlined vendor acquisition strategy, which resulted in multiple vendors and small project assignments. This approach provided a successful framework for vendor management. Where appropriate, and taking into account government tendering requirements, it could serve as one of the models for future government information technology projects.

Desktop Management Initiative

The Desktop Management project has been well-managed and successful. We recommend the completion of the deployment of the Desktop initiative.

Better Systems Initiative

We recommend that the Better Systems Initiative be re-examined. This complete, detailed and comprehensive review of the project is warranted to ensure that any continuing work meets the intended overall objectives within reasonable timeframes and budgets. Any continuing work, while the review is underway, should be specifically approved by very senior government officials. Our recommendation is based on the actual progress to date and the roughly 55% proposed potential budget increase to bring the total to almost $200 million. Some slowdown and review in the BSI project seems to be occurring. In the recommended review, particular attention should be made to differentiate among the three major clusters: core applications, the integrated case management, and the information access utility.

Health Information Network Initiative

This particular health information network initiative has produced little in support of emerging health information technology trends. We recommend that the project be stopped. We also recommend that the Government redefine its health information needs and, in light of trends in Canada and in health care information generally, re-start an initiative in health information.

Better Methods Initiative

The Better Methods initiative should be provided with funding for the balance of this year to help stabilize the already deployed SAP system, to successfully conclude calendar and fiscal year-end processing, and to provide absolutely essential custom reports to program managers. Before moving forward with the next phase of Better Methods, some fundamental action steps are needed. The overall project objectives, scope, and direction must be re-visited. New project priorities and a new governance structure should be established. The project needs to be adequately placed ("housed") organizationally. Formal project and risk management methodologies must be re-instituted. A thorough and comprehensive definition of sub-project deliverables must be developed. Finally, estimates of activities, efforts, and costs need to be produced and regularly reviewed by senior government officials.

1. INTRODUCTION

On October 18, 1999, Manitoba Finance issued a Request for Proposal on a financial review of the Government of Manitoba. The review was to be conducted in two phases:

> Phase I: to estimate those obligations which the Government of Manitoba must meet for fiscal 1999/2000, the revenues it will have available to do so, and the impact the findings for the current fiscal year will have on the two subsequent fiscal years.
>
> Phase II: to examine the processes by which budgets are developed, make recommendations on how to improve the accuracy of future budgets and improve the control of expenditures.

This information technology initiatives review is part of Phase II and is a high level review of the Province's five major information system investments.

Since 1995, the Province has made major financial commitments to information technology (IT). The five projects reviewed represent over $500 Million in plans and financial commitments. The projects are highlighted in Table 4.

Table 4 - Major IT Initiatives

Major Information Technology Initiatives	
Year 2000 Project	To minimize the impact of Year 2000 computer problems on the Province of Manitoba.
Desktop Management Project	To deploy the infrastructure and to provide a uniform, ongoing service to manage the Province's desktop computing resources.
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Better Methods Initiative Project	To implement the SAP software computer applications to meet the Province's financial and human services requirements.

The review is based on two information gathering techniques:

- At the outset, we requested documentation from each of the projects. The information included clarifications of project objectives, stakeholders, governance, plans, budgets, contracting obligations, risk management processes, evaluation frameworks, business cases, status reports and project management approaches. We reviewed these documents and extracted the relevant information.

- We conducted extensive face-to-face interviews with project sponsors, leaders, managers and vendors. We conducted follow-up information exchanges with project representatives to collect additional information on specific matters and to confirm our conclusions on project directions and results.

Our review was limited in scope and most of the execution took place over a four week period. Our review was not an audit, nor did we conduct an examination of the quality of the deliverables from all the projects, e.g., documentation, software, system functionality, etc., and we can offer no opinion in this regard. Within the time constraints imposed by the review, we have made the assumption that the information provided to us, through documentation and interviews, was accurate, timely and complete. Three of the projects under review were evolving; therefore, our findings represent a snapshot as of December 1999. We specifically focused on answering the following questions about each project:

- *Current Status*
  - ➤ What is current status in progress and costs?
  - ➤ What has been delivered?

- *Performance*
  - ➤ What is the project performance on timely delivery, on budget performance?
  - ➤ What is the likely future expenditure on deliverables vs. the initial concept, costs, etc.?

- *Go-forward Strategy*
  - ➤ What are the pre-requisites for success of the project?
  - ➤ Is the project still relevant? Will the benefits be realized?

The main purpose of our review was to provide a summary perspective for policy makers. Readers should be aware that applying these high-level findings for purposes other than that denoted here may not be appropriate.

The report is structured in the following sections:

Section 2: A Project Evaluation Framework, which presents our approach for conducting this evaluation of each one of the projects. Our evaluation is based on this common framework.

Section 3, the detailed review of the Year 2000 Initiative.

Section 4, the detailed review of the Desktop Management Initiative.

Section 5, the detailed review of the Better Systems Initiative.

Section 6, the detailed review of the Health Information Network Project.

Section 7, the detailed review of the Better Methods Initiative[5].

[5] Deloitte and Touche had a significant involvement in this project. Therefore, the review of this initiative was conducted by an independent firm: G. Braha & Associates Ltd. G. Braha & Associates Ltd prepared section 7 on the Better Methods Initiative. It is included in this report for completeness. G.Braha & Associates Ltd sent the section under separate cover directly to the Financial Review Steering Committee. We accordingly have had no part in preparing it for publication.

2. PROJECT EVALUATION FRAMEWORK

The risks associated with IT projects underline the importance of aligning business planning with integrated information management/information technology (IM/IT) strategies. The strategy should set priorities and budgets for an organization's information technology investments as a whole, allowing executives to assess and successfully manage projects development, operations, enhancements and innovation. Within this context, organizations must review and prioritize their IM/IT investments and — based on this review and available funds — select those investments that will deliver optimal value. It is also essential to apply project management disciplines to all approved initiatives, as well as to implement risk and performance management activities throughout the entire process.

Within this context, we have defined four overall principles by which information technology projects are managed. We used these principles to evaluate the Province's five main IM/IT initiatives. The principles are:

Principle 1: Projects are aligned with and support the *business directions* of the Province

Information technology projects are undertaken to achieve successful and economical support of business functions. The project sponsor, project leader and project manager[6], together with the management and major users of the business function, must ensure that the system achieves these particular goals and delivers the expected benefits. The support of business needs must be foremost when the system is conceived and this achievement must be then regularly re-evaluated throughout the project.

Principle 2: Clear *accountabilities* are established

Large information technology projects are very complex and expensive undertakings. The responsibilities of all parties must be clearly defined and delegated authorities specified precisely. Problems must be resolved in a timely manner to prevent them from threatening the success of the project and the achievement of the expected benefits.

[6] The *Project Sponsor* is responsible for realizing the benefits predicted for the project. This is typically a senior official responsible for the business function that the project will support. The *Project Leader* has overall responsibility for the project, is accountable for all internal and external aspects of the project and is typically a senior information technology official. The *Project Manager* performs the day-to-day management of the project and reports to the Project Leader.

Principle 3: Projects are managed within the context of an *integrated project management discipline*

Sound project management is the key for the successful completion of the project and the achievement of the expected benefits. An integrated project management discipline includes[7]:

- Project Integration Management: the processes required to ensure that the various elements of the project are properly coordinated.
- Project Scope Management: the processes required to ensure that the project includes all the work required, and only the work required, to complete the project successfully.
- Project Time Management: the processes required to ensure completion of the project on schedule.
- Project Cost Management: the processes required to ensure that the project is completed within the approved budget.
- Project Quality Management: the processes required to ensure that the project will fully satisfy the specific needs for which it was undertaken.
- Project Human Resources Management: the processes required to make the most effective use of the people involved with the project.
- Project Communications Management: the processes required to ensure timely and appropriate generation, collection, dissemination, storage and ultimate disposition of project information.
- Project Risk Management: the processes concerned with identifying, analyzing, and responding to project risks.
- Project Procurement Management: the processes required to acquire the goods and services necessary for the project's successful completion, from vendors outside the performing organization.

Principle 4: Project management decisions are based on *risk management*

The objective of a system development project is to create an information technology system that successfully supports the business function and completion of the system within its planned cost and time parameters. After a given organization tends to emphasize meeting the target dates resulting in projects pressing to meet commitments, even when there are indications the

[7] From "A Guide to the Project Management Body of Knowledge", Project Management Institute

project is in difficulty. Attention must be given to the sources of risk at the outset and then reviewed during the course of the project.

The principles described above support an evaluation of the Province's IM/IT initiatives according to a sound project management approach. To complete our evaluation, it was necessary to gain an understanding of the current status of each project. This was achieved by placing each initiative within the project life-cycle of four phases:

Project Initiation: Starting from idea realization through to the development and evaluation of a business case and prioritization of the potential project ideas, against the organization's business plan and other organizational priorities and resource constraints.

Project Planning: Once the project is approved as a priority matter and a sponsor has been secured, effective project planning is critical to successful resourcing and execution of the necessary project activities. This stage includes development of the overall project structure, the activities and workplan/timelines that will form the basis of the project management process throughout the project lifecycle.

Project Execution: Against the project plan and project organization structure defined in the previous stage, project activities are executed, tracked and results measured. Project execution not only includes the completion of planned activities, but also the evaluation of their success and contributions. It requires the continual review and adjustments reflecting a project status and outstanding issues against the original project business case.

Project Closeout and Wrap-up: One of the key success criteria for continuous process improvement is defining a formal process for ending the project. This includes evaluating the successful aspects of the project as well as identifying opportunities for improvement, identification of project "best practices" that can be leveraged in future projects, assessing the performance of project team members and the proper disposition of the resources assembled for the project.

In the pages which follow, we describe each of the five initiatives, our assessment of each one, and then our recommendations. We begin with the Year 2000 initiative.

3. YEAR 2000 INITIATIVE REVIEW

The provincial government made Year 2000 compliance a top priority. A Year 2000 Project Management Office was established to co-ordinate compliance efforts across government.

To accomplish this the Government's strategy was to engage a large number of vendors for discrete tasks. Much of the project management activity was centrally controlled.

The Year 2000 problem was considered to be the most urgent information technology issue facing government. If the Year 2000 issue was not addressed, government might not be able to conduct business or provide services to the public. The immovable deadline of December 31, 1999 was obviously the major factor in proper planning.

The issue was immense. It affected hardware, software and areas outside traditional information technology; the Year 2000 "bug" threatened virtually every system in government. This was an expensive project, in part because there was potentially no business benefit beyond January 1, 2000.

The Year 2000 Project had four key objectives:

1. To ensure that all government date sensitive business functions, computer systems, and equipment, of any kind, were Year 2000 compliant, before the time that they might normally fail.

2. To ensure the best use of government funds throughout the remediation process.

3. To ensure that the Manitoba business community and government business partners had a high degree of awareness of the Year 2000 issues, concerns and the potential solutions which existed.

4. To establish long term methodologies beyond the Year 2000, such as:
   - Quality assurance and certification process.
   - Inventories of information technology systems. (hardware, software, etc,)
   - Project management methodologies.
   - Pre-qualified vendor reservations systems / web server technologies.

3.1 CURRENT STATUS

What is the current status in progress and costs?

The Year 2000 project has been completed successfully, on time and under budget and as a result the government was ready to enter the Year 2000. Now, the project is winding down. Only very minimal issues were reported and those were with medical equipment which did not have any impact on patient care or hospital administration.

What has been delivered?

The scope of the Year 2000 project was all-encompassing and included:

- All government departments, boards and agencies, under the direct control of a specific government department.
- Health-care facilities and institutions.
- Educational institutions and arms-length agencies, who receive government funding including major crown corporations were considered "in-scope". Some of these were limited to awareness, liaison, strategy review, and assistance in specific cases only.
- Essential services such as fire, 911 services, water, heat, waste and health care.
- Manitoba business continuity - awareness and support for generic training and education in developing strategies.

The Year 2000 project ensured compliance in the following technical areas:

- Recognized information technology supporting automated business applications.
- Computer hardware and operating systems.
- Word processing, spreadsheets and user database applications.
- Physical sites including elevators, security, fire alarm and various card-key systems.
- Hospital and related medical equipment.
- Miscellaneous office equipment, such as telephones, faxes, copiers and VCRs.

3.2 PERFORMANCE

What is the project performance on timely delivery and budget performance?

The government budgeted $70 million for the Year 2000 project. Expenditures are expected to be in the order of $66 million by the time the project essentially concludes March 31, 2000. The Year 2000 project expenditures are presented in Table 5 below:

Table 5 - Year 2000 Initiative Expenditures (000's)

	1997/1998 Actual	1998/1999 Plan	1998/1999 Actual	1999/2000 Projected	1999/2000 To Date	Total Actual and Projected
Project Office	-	$1,100	**$643**	$1,509	**$718**	$2,152
Consulting	**$79**	$8,773	**$7,952**	$4,197	**$2,040**	$12,228
Non IT Equipment	-	$1,000	-	$1,500	**$336**	$1,500
Health IT Consulting	-	$18,720	**$9,570**	$14,930	**$15,680**	$24,500
Health Premises	-	$2,000	**$3,050**	$950	**$1,570**	$4,000
Health Medical Devices	-	$14,660	**$4,180**	$11,480	**$2,860**	$15,660
RHA Staff	-	$1,440	**$952**	$1,318	**$530**	$2,270
ISM Testing	-	$500	**$562**	$1,438	**$1,181**	$2,000
Essential Services	-	$1,000	**$7**	$1,493	**$419**	$1,500
Total	$79	$49,193	$26,916	$38,815	$25,334	$65,810

Source: Province of Manitoba

What is the likely future expenditure on deliverables vs. the initial concept, costs, etc.?

The Year 2000 project is largely completed. Remaining activities include reviewing the contingency plans, (e.g., leap year concerns, fiscal year-end concerns), reviewing the transition strategy and executing the communication plan, until all the conditions are met. Some additional expenditures will be required to replace non-compliant equipment.

GENERAL EVALUATION

The evaluation of the Year 2000 project against the principles set out in our framework is presented in Table 6 on the next page.

Table 6 - Year 2000 Initiative Evaluation

	Business Direction	Accountabilities	Integrated Project Management	Risk Management
Year 2000 Project	Manitoba's Year 2000 Project focused on four key areas: 1. Government Departments; 2. Health Care Facilities; 3. Essential Services; and 4. Business Awareness. The Year 2000 project was clearly aligned with the government overall direction, with the primary objective of reaching government-wide compliance.	The Manitoba Provincial Government established a Year 2000 Project Management Office to co-ordinate compliance efforts across government. The Year 2000 Project Office had clear accountability and project structures, as reflected in its five-levels auditing and certification process: 1. Departmental Reviews 2. Quality Assurance Process 3. Year 2000 Internal Audit 4. Year 2000 External Audit 5. Departmental signoff	The Year 2000 project had a clear scope with solid time, cost and quality management. The project included an extensive communication strategy. In addition, the Year 2000 project was integrated with other government initiatives (BSI, Desktop and Better Methods Project).	The Year 2000 project was based on a clear methodology, with regular project reviews. The project included a contingency plan and transition strategy, detailing project risks and action plan so to mitigate the identified risks.

Over the project life cycle, the Year 2000 project demonstrated:

- *Very Good Project Initiation* processes – a clear vision and definition of compliance. The project demonstrated a solid approach for prioritization and resource constraint management.
- *Very Good Project Planning* processes – the project structure and governance were clearly defined. The project work-plan and scope were clearly defined and documented.
- *Very Good Project Execution* – the project activities and results were well executed, tracked and measured.

3.3 GO-FORWARD STRATEGY

What are the pre-requisites for success of the project?

The Year 2000 project is completed. Therefore, there are no pre-requisites for future phases.

Is the project still relevant? Will the benefits be realized?

The Year 2000 initiative was generally well planned, controlled and executed. The project is to be completed by March 31, 2000. The obvious project benefit is continued IT functionality past January 1, 2000; thereafter the project is not particularly relevant. However some tools and methodologies are probably useful beyond the completion of the project, in particular:

- Quality Assurance and Certification Process: the Year 2000 project included a five-level audit strategy, from departmental reviews to executive sign-off. The strategy could form the basis for a continuing Quality Assurance process within the government.
- Pre-qualified Vendor Reservations Systems / Web Server Technologies: the Year 2000 project developed a streamlined vendor acquisition strategy, which provided for a multi-vendors environment, small/manageable sub-projects, and quick turn around of contracting. Both the procurement strategy and the associated automated/Web-based application developed for the Year 2000 procurement could be used for other IT project procurements.

- Inventory Systems: the Year 2000 project prepared a complete inventory of information technology within government. This automated inventory could be of use when attempting to define and describe the current state of IT within government. It ought to be maintained.

It should be noted that some of the legacies of the Year 2000 project, for example the Quality Assurance, Project Management and Vendor Tracking application, are already in use on the BSI project.

Finally, it should be noted that the vendor strategy was successful because of strong, stable and corporate-wide technology management. Lessons learned in this approach should have application in future projects.

RECOMMENDATION

The Year 2000 project had a very good track record. It is planning to close within 60-90 days. We concur with this.

The Year 2000 project has developed and implemented a streamlined vendor acquisition strategy, which resulted in multiple vendors and small project assignments. This approach has provided a successful framework for vendor management. Where appropriate, and taking into account Government tendering requirements, it could serve as one of the models for future government information technology projects.

4. DESKTOP MANAGEMENT PROJECT

The Desktop Management Project was initiated in September 1997 to provide a uniform, ongoing management of the province's desktop computing resources. In this context, the project was defined to include all management, acquisition and support activities related to microcomputers, common personal productivity software, local area networks and all the network enabling software and hardware.

The Province's vendor strategy was to enter into a long-term arrangement with a single vendor. This vendor is EDS Systemhouse.

4.1 CURRENT STATUS

What is the current status in progress and costs?

The Desktop Management project is mainly completed.

What has been delivered?

The Desktop Management project planned to provide desktop units to all government Departments and Agencies, excluding Family Services agencies. In January 1999, the Treasury Board approved the inclusion of Family Services in the Desktop initiative. This added 1,800 desktops to the original estimate of 7,600 workstations for a total of 9,400 workstations.

4.2 PERFORMANCE

What is the project performance on timely delivery, on budget performance?

The original estimate for this initiative was in the order of $150 million. Through increases in the number of seats, system capability and some scope changes, today's plan has a cost of about $200 million. The capital investment component of the budget is $81.6 million.

Table 7 below presents the financial estimates for the Desktop Management project. For the past two years the planned and actual investments appear to have been well managed.

Table 7 - Desktop Management Initiative Financial Estimates (000's)

	1997/1998		1998/1999		1999/2000	Sub-total	Post Year 2000[8]	Total
	Actual	Projected	Actual	Projected	Actual			
Capital Investment	$4,000	$4,100	$58,500	$59,000	$19,100	$81,600	-	**$81,600**
Operating Expenditures	$1,900	-	$12,300	-	$22,900	$37,100	$77,800	**$114,900**
Total	$5,900	$4,100	$70,800	$59,000	$42,000	**$118,700**	$77,800	**$196,500**

A government-wide managed and standard desktop and network infrastructure has been implemented. A managed environment helps to control computing costs. Implementing best practice procedures over a number of years could further lower these costs.

We have compared the annual desktop cost per work station unit established by the Office of Information Technology to comparison data provided by independent firms that conduct benchmark and research studies of the information technology industry. Our analysis indicated that the Government of Manitoba has secured a favourable financial arrangement.

What is the future expenditure on deliverable vs. initial concept, costs, etc.?

There has been discussion of a significant extension of Desktop to hospitals, other health institutions and Regional Health Authorities (RHA). The preliminary estimate is in the order of $40 million. Serious consideration should be given to this concept but balanced against other government priorities.

GENERAL EVALUATION

The evaluation of the Desktop Management Initiative against the principles set out in our evaluation framework is presented in Table 8 on the next page.

[8] Projection to end of contract March 31st, 2003.

Table 8 - Desktop Management Initiative Evaluation

	Business Direction	Accountabilities	Integrated Project Management	Risk Management
Desktop Management Project	The Desktop Management project was intended to provide common hardware and software across government to ensure the compatibility of systems and to maximize economies of scale. This initiative contributed to the Year 2000 readiness of the Manitoba government by replacing non-Year 2000 compliant equipment. In addition, the Desktop Management project was to be the foundation of the government-wide management information infrastructure – a necessary component for the improvement and enhancement of services to Manitobans.	The government established the Desktop Management Unit to co-ordinate the acquisition and deployment of the desktop management project. Project governance was clearly defined, with effective communication channels throughout the government.	The Desktop Management project had clearly defined scope, time and budget management processes. The project was well understood by both the government and the vendor, which resulted in clarity of issue identification and resolution.	The Desktop Management project had a process for risk identification, issue resolution and regular status reporting.

Over the project life cycle, the Desktop Management Project demonstrated:

- *Very Good Project Initiation* processes – the Desktop Management project had a clear vision which was fully aligned with the Government's business plans and priorities.
- *Very Good Project Planning* processes – the Desktop Management project had a well-defined project structure and governance. The project work-plan and associated scope were clearly documented and well understood by the Government and Vendor.
- *Good Project Execution* – in general, the Desktop Management project was well executed. Although there was a risk management plan, we found little evidence of risk management practices commensurate with the size and complexity of the project. However, the experience and competence of the government and vendor teams resulted in generally successful project delivery.

In summary, the Government can consider this project a success. Its vendor strategy and the vendor relationship itself appear to have worked well.

4.3 GO-FORWARD STRATEGY

What are the pre-requisites for success on the project?

The Desktop Management project is essentially completed and was successful. Pre-requisites for future phases are not required. However, a formal post-completion review should be conducted.

Is the project still relevant? Will the benefits be realized?

The modernization of information technology and replacement of non-Year 2000 compliant systems was a strategic investment and will enable government to improve and enhance the service it provides to all Manitobans.

The principal merit of the project is the development of a government-wide common technology infrastructure. It is appropriate and consistent with approaches adopted by a number of provincial and state governments.

The government is already realizing benefits from the Desktop Management project through increased use of a common e-mail solution and Year 2000 compliance. In addition, the project provided over 20,000 days of training, which resulted in a better-trained civil service.

It should be noted that the Desktop Management Project contributed to the successful completion of other large IT initiatives within the Government. For example, the Better Methods Initiative has been greatly facilitated by the deployment of a common desktop across the client organizations. It also permitted the ability to provide a secure technology environment in the Government.

RECOMMENDATION

The Desktop Management project has been well-managed and successful. The project management have proposed to continue the upgrading and deployment of this technology and we concur with this proposal as resources allow.

5. BETTER SYSTEMS INITIATIVE (BSI)

The Better Systems Initiative was established in January 1997 and is expected to be completed in 2001/2002. BSI was meant to change the way the Government interacts with its clients and customers. The goal of BSI is to enable the delivery of those services that lend themselves to self-service and automated service methods.

The vendor strategy was to engage a "single vendor" as the prime contractor for the project. The contract was awarded to IBM Canada.

The vision called for the creation of a "single-window access" through which all Manitoba citizens and businesses will be able to transact their affairs with government. Single-window access to government services and products would be developed by:

- Focusing delivery on the citizen.
- Improving the way that data is collected, managed and protected.
- Examining and streamlining administrative processes.

The single-window concept was intended to provide citizens with convenient access to government products and services. It would also promote increased equality of access and would raise the level of satisfaction that Manitobans have with their government.

BSI can be defined technically as consisting of four components:

- Multiple access and viewing capability consisting of several channels: internet, kiosk, telephone, direct contact.
- A series of human services utilizing a common database.
- A series of core business applications utilizing a common database.
- Common services such as electronic faxing, printing, help desks, etc.

BSI is comprised of a team of professionals seconded from across government working with outside consultants and software manufacturers to redesign processes and develop customized systems. Through a standard government request-for-proposal process, Manitoba formed an alliance with the vendor to provide consulting and support services to BSI. It should be noted that the consulting services were to be provided on a "per diem" basis. This puts a responsibility and pressure on Government to closely manage timeliness and vendor performance.

5.1 CURRENT STATUS

What is the current status in progress and costs?

When the project was first envisioned a "high water" project cost was established, based on the then anticipated costs to provide a minimum, existing functionality. To that was added an estimated amount to provide a "multiple channel" access and view of the applications which fell under "phase 1" of the project the projected cost was $137.5 million for external vendor costs. In mid-1998, the Chief Information Officer of the Government, with approval of the Treasury Board, mandated a "reset" of the technical direction of the project. This included a change in approach and a lowering of the estimated project costs. The reset also reflects the inclusion of Manitoba staff resources within the overall estimate. The revised project estimate was then at $123 million, for both external and internal resources. However, based on a review in late December and early January, the total projected cost is now $191 million; (in late January, we were provided with yet another revised estimate that could place the initiative in the order of $160 million).

The initiative is divided across three major areas, namely:

- Core Systems, which includes the following components: Taxation, Personal Property, Land Titles, Companies Office, and Business Inspections.
- Integrated Case Management (ICM) for family services, education and training programs.
- Information Access Utility (IAU).

Preliminary information indicates that the project is behind schedule and could be significantly over-budget if the project continues unchanged. The BSI project has recently (October 1999) been assigned a new project manager and a re-planning of the project has been underway.

What has been delivered?

Currently, the BSI project has completed some of the business cases, requirements definition and re-engineering for each of the components. Computer system development is underway in a number of areas, as described below and some systems have been implemented. As noted earlier, the project is currently undergoing fundamental re-planning. In particular, the concept of multiple releases is being introduced to manage the system development cycle and provide a framework for project delivery and risk management. It should be noted that releases will most likely result in some automation

being implemented with less functionality than originally envisioned. Current planned releases are as follow:

- Core Systems
  - ➤ Taxation: release 1 is planned for November 2000. Other releases are to be determined.
  - ➤ Personal Property: release 1 is planned for fiscal year 2000. Other releases are to be determined.
  - ➤ Land Titles: release 1 is planned for March 2000, release 2 for October 2000 and release 3 for June 2001.
  - ➤ Companies Office: release 1 is planned for April 2000, release 2 for October 2000 and release 3 for June 2001.
  - ➤ Business Inspections: release 1 was completed in January 2000. Other releases are to be determined.
- ICM: release 0 is planned for March 2000, release 1 for April 2000, release 2 for October 2000 and release 3 for April 2001.
- Student Financial Assistance (SFA) release 1 is planned for January 2000, release 2 for April 2000.

5.2 PERFORMANCE

What is the project performance on timely delivery, on budget performance?

The BSI project has experienced difficulties in the business reengineering components, in excessive time on analyzing the historical situation and ineffective project management.

In the spring of 1999, the Government arranged a project review conducted by a third party. That review and our findings are quite similar.

To this point, the project has delivered reports, such as the business cases, requirements definition and re-engineering results associated with each component of the BSI. However, system development efforts are currently underway and several more applications are to be completed. Additional releases are scheduled for the first quarter of 2000.

Table 9 below presents the financial estimates for the Better Systems Initiative project. It shows a significant escalation in projected costs to complete.

Table 9 - BSI Financial Estimates (000's)

	1998/1999 and Prior	1999/2000			2000/2001 and forward	Sub-total	Managed Operations[9]	Total[10]
	Actuals	*Actuals & Committed*	*Forecast*	*Total*	*Projected to Complete*			
Core Applications								
Taxation	$4,500	*$3,600*	*$1,000*	$4,600	$16,600	**$25,700**	**$8,900**	**$34,600**
Personal Property Registry	$1,800	*$3,200*	*$500*	$3,700	$3,200	**$8,700**	**$3,900**	**$12,600**
Land Titles Office	$3,900	*$4,300*	*$2,300*	$6,600	$14,100	**$24,600**	**$7,700**	**$32,300**
Companies Office	$700	*$2,500*	-	$2,500	$2,800	**$6,000**	**$1,200**	**$7,200**
Business Inspections	$1,200	*$2,000*	*$400*	$2,400	$5,800	**$9,400**	**$1,500**	**$10,900**
ICM	$14,200	*$9,100*	*$3,100*	$12,200	$32,500	**$58,900**	**$15,400**	**$74,300**
IAU	$2,400	*$7,300*	*$300*	$7,600	$8,700	**$18,700**	-	**$18,700**
Total	**$28,700**	***$32,000***	***$7,600***	**$39,600**	**$83,700**	**$152,000**	**$38,600**	**$190,600**
Plan	$30,100			$34,000				
Variance	($1,400)			$5,600		$4,200		

The project needs to be re-vectored and re-planned[11], with adjustments in the project methodology to maximize the use of Rapid Application Delivery (RAD). The concept of multiple-releases will contribute to the project correction and provide the appropriate framework for successful delivery.

9 The Managed Operations column represents the cost to support the BSI until its planned completion in 2001/2002

10 In the course of doing our review, we were informed that the One-tier Welfare System represents an additional $8.6 million investment. Although not part of BSI initially, it is expected that the One-tier Welfare System will eventually have to be integrated to the BSI. This would bring the total projected cost of the BSI to over $199 million.

11 Please note that re-vectored means change of direction, while re-planning means change of how/when the new direction will be met.

What is the future expenditure on deliverables vs. the initial concept, costs, etc.?

The BSI has spent approximately $60.7 million to-date. The project is currently projecting an additional $7.6 million in 1999/2000, an extra $83.7 million to completion, and another $38.6 million in managed operations during the life of the project. This represents an investment of approximately $200 million, with around $130 million in future expenditures. The history of the initiative to-date and the complexity of the project suggest the need to first, revise the plans, second challenge the approach to execution and control of the project and third, to re-do the project estimates.

General Evaluation

The evaluation of the BSI against the principles set out in our evaluation framework is presented in Table 10 below.

Table 10 - BSI Evaluation

	Business Direction	Accountabilities	Integrated Project Management	Risk Management
Better Systems Initiative (BSI)	The Manitoba government established BSI to assist in meeting changing citizen needs and expectations for service from government, by providing information technology tools and applications relating to core services and integrated case management for social and family services. As such, the BSI fits within the thrust to renew and improve service delivery to Manitobans.	Until recently, the BSI project structure and governance seemed to be unclear. The BSI is currently undergoing a re-planning exercise. As a result, a revised project management structure was defined in November 1999. Discussions on the overall governance of the initiative are on-going. Based on this re-defined project structure, the accountabilities framework now appears to been in place.	The BSI project had a clear vision statement, with well-defined components. However, in project execution the initiative suffered from unanticipated complexities in the business re-engineering, over-emphasis on analyzing historical situations, and some ineffective project management.	The BSI is in need of a re-adjustment of its methodology, which has been recognized by the government. Currently, the project is being re-planned, with the underlying philosophy of: ➤ Dividing the project into smaller, more manageable modules. ➤ Resetting the priorities. ➤ Confirming the value of the required deliverables. ➤ Revisiting the project methodology.

Over the project life cycle, the BSI project demonstrated:

- *Good Project Initiation processes:* BSI had a vision as well as a fairly good understanding of its components. The project also had a set of approved business cases, which were aligned with the government's improvement of service delivery to Manitobans.

- *Poor Project Planning processes:* the government had an ineffective project governance structure and the project had a somewhat unclear and complex project workplan. Although the project methodology seems to adopt a Rapid Application Development (RAD) approach, the project work-plan did not seem to reflect that approach.

- *Poor Project Execution:* the project suffered from poor project management and execution. The government's project managers did not seem to be regularly tracking and measuring progress against plan. In fact, the project schedule seemed to be redefined as part of the status reporting cycle.

In summary, this project has had mixed success.

5.3 GO-FORWARD STRATEGY

What are the pre-requisites for success on the project?

The BSI project is currently behind schedule and over budget. The following principles should be addressed in order to maximize the chances for overall project success and to protect the funds already invested.

- *Business Direction:* the BSI project had strong commitment from users. This commitment must continue to be present in the future phases of the project.

- *Accountabilities:* the BSI project needs to be adjusted to ensure that the delivery of its component is successful -- on time and on budget. This requires a clearer accountability structure, with defined authorities and an effective decision making process.

- *Integrated Project Management:* the issues currently associated with the BSI project reflect the major aspects of an integrated project management approach, namely:
    - The project had a definition of the initial overall scope, with associated schedules and costs. Individual components were less clear.
    - Although the initial scope was well understood, the delivery of many components seems to have suffered from scope-creep, i.e., incremental changes or expansion.
    - The project seems to have suffered from lack of direction caused by a somewhat unclear governance process. The project demonstrated the need for continually reaffirming the project sponsorship and stakeholder support.
    - The project included a re-engineering of the BSI business functions. The challenges, in terms of change leadership associated with re-engineering projects are apparent within BSI.

- *Risk Management:* the project needs to define a risk management process, with periodic reviews where adjustments to the project schedule, budget and scope can be made. The current re-vectoring of the project, with its multi-releases concept, will provide for smaller, more manageable sub-projects. This should contribute to minimizing and managing the project risks.

Is the project still relevant? Will the benefits be realized?

The BSI vision, to "... provide access to government when you need it, where you need and how you need it" is still valid. The concept of a single-window access through which all Manitoba citizens and businesses will be able to transact their affairs with government is especially relevant today. This type of initiative is commonplace in other provincial governments and is appropriate for any e-government service strategy. The appropriate Departments have endorsed the business case for the BSI. To date, the project has delivered business cases and user requirements definitions, which are the foundation of future work. Some system development efforts are currently underway, some system releases have been made, and more are planned. Whether the full amount of $60 million invested to-date will drive substantial benefits to the Province remains to be proven. However the realization of value from the remaining investments depends in large part upon the outcome of the replanning efforts underway.

RECOMMENDATION

We recommend that the Better Systems Initiative be re-examined. This complete, detailed and comprehensive review of the project is warranted to ensure that any continuing work meets the intended overall objectives within reasonable timeframes and budgets. Any continuing work, while the review is underway, should be specifically approved by very senior government officials. Our recommendation is based on the actual progress to date and the roughly 55% proposed potential budget increase to bring the total to almost $200 million. Some slowdown and review in the BSI project seems to be occurring. In the recommended review, particular attention should be made to differentiate among the three major clusters: core applications, the integrated case management, and the information access utility.

6. HEALTH INFORMATION NETWORK (HIN)

The Health Information Network (HIN) was a broad-based initiative to electronically connect the health care providers of Manitoba so that they could exchange clinical information, administrative information, and perform assessments of program effectiveness based on empirical data in order to improve health outcomes.

After a tender process, The Government of Manitoba signed a single vendor agreement with an organization called SmartHealth to supply consulting services to the HIN project for a period of five years or a maximum of $100 million, whichever comes first. This project began in the Fall of 1995. The objectives of the project were articulated on page 3 of the Master Agreement with SmartHealth: "Manitoba intends, in consultation with health care providers and consumers, to:

(a) undertake an extensive review and study of the viability of implementing HIN for the province of Manitoba to electronically store information about the health of Manitobans and to link health care providers and consumers, including undertaking an extensive cost benefit analysis of such implementation;

(b) if feasible, arrange for the development of the methodology, plans and specifications for the design of the HIN which will meet the implementation requirements;

(c) if feasible, arrange for the development, implementation and delivery of the HIN in accordance with the plans and specifications approved by Manitoba; and

(d) if the HIN is implemented and delivered, arrange for the management and maintenance activities required for the HIN."

The approach that was conceived in the Master Agreement was based on a staging strategy, beginning at Stage 0 (Opportunities Definition) and ending at Stage 5 (Operations). These stages run across a number of components: laboratories, physicians, consumers, community health, pharmacies, hospitals, and "any other Components that may be requested by Manitoba and accepted by SmartHealth (the vendor) from time to time".

6.1 CURRENT STATUS

What is the current status in progress and costs?

SmartHealth has currently delivered approximately $15 million of approved work under the Master Agreement. In this context, approved work means that the Government has approved, and signed specific work-plans submitted by the vendor.

In addition, there is approximately $14-18 million of work, for which the vendor does not have approved work-plans signed by Government officials. A more recent Amending Agreement, currently awaiting Government's consideration, documents the nature of the unapproved work performed by SmartHealth.

At present, the project has only a single active Statement of Work at an approximate value of $373,000. In addition, the DPIN-ER application is in its final stages of implementation.

What has been delivered?

The Department of Health and the vendor recently prepared together a preliminary inventory of the HIN project deliverables to the end of 1999, as shown in Table 11. This inventory does not provide an evaluation of the value of the deliverables to the government, but rather an inventory of them. In fact, the dollar values provided in the table only state what has been spent by SmartHealth, not whether good value for money was delivered. Based on our cursory review, costs appear to be excessive for what was delivered in some areas and a more detailed analysis by the Government is appropriate.

Table 11 - HIN Product Inventory

Item	Cost (in 000's)	Potential Future Use		
		High	Medium	Low
Diagnostic Services Information Network (DSIN)	$4,712	✔		
HIN Re-planning	$4,600	✔		
DPIN-ER	$3,915	✔		
Target Architecture	$403	✔		
Infrastructure Requirements	$3,804	✔		
Infrastructure Implementation	*$8,760		✔	
Rate Increase	$1,213			✔
General Facilitation	$1,102			✔
Physicians and Primary Care	$505			✔
Community Health	$599			✔
DPIN-HP	$96	✔		
Health Card	Included in * above		✔	
Total	**$29,709**	**$17,530**	**$8,760**	**$3,419**

Source: Prepared by the Department of Health and reviewed by the Vendor

In addition to the product inventory, the Department of Health and the vendor also prepared a detailed description of potential product use, reproduced in Table 12 on the following pages. We have included, in the far right column (entitled Comments), our high level assessment of the potential value of the deliverables. This assessment is based on the information provided to us, and is not a detailed audit of the HIN deliverables from SmartHealth. An extensive evaluation of the possible future use of the deliverables is really only possible against a future HIN vision and strategy. Such a vision or strategy does not currently exist and would need to be developed and approved by the Government.

Table 12 - HIN Potential Product Use

VENDOR AND DEPARTMENT SUPPLIED INFORMATION				High Level Review Comments (Deloitte & Touche)
Product	**Description**	**Potential**	**Cost (in 000's)**	
Diagnostic Services Information Network (DSIN)	• Reports and software – feasibility studies, detailed design specification documents, software utilities (not implemented into a production environment) **Status:** • Software development halted on November 26, 1998. • Final reports accepted by Manitoba Health on January 15, 1999.	• DSIN will provide test ordering, test history, and test results tracking. • DSIN is not a lab system or a radiology system. • Standards for test result transmission and storage.	$4,712	Currently, DSIN is an incomplete software application. It is unclear if the feasibility studies and design specifications will still be valid under the current Health environment. In addition, it is most likely that the software utilities have little use outside the context of the continued development of DSIN.

Table 12 - HIN Potential Product Use (Continued)

VENDOR AND DEPARTMENT SUPPLIED INFORMATION				High Level Review Comments (Deloitte & Touche)
Product	**Description**	**Potential**	**Cost (in 000's)**	
HIN Re-planning	• This was a period of down-time for the project as government reassessed the go-forward direction for the HIN.	Input to sizing documents was created for a number of projects (ICD-10 conversion, SACPAT, data warehousing) to meet short-term priorities of the Department of Health.	$4,600	It is our understanding that sizing documents, in this context, are essentially work-plans. Their potential value for the continued development of HIN is doubtful for two reasons: 1) Short-term priorities may no longer be valid under the current Health environment. 2) Time and effort estimates may no longer be valid, outside the context of the Master Agreement.

Table 12 - HIN Potential Product Use (Continued)

VENDOR AND DEPARTMENT SUPPLIED INFORMATION				High Level Review Comments (Deloitte & Touche)
Product	**Description**	**Potential**	**Cost (In 000's)**	
DPIN-ER	• An operational computer system • The application makes retail drug prescription histories available to emergency wards at 83 sites across Manitoba. **Status:** • Currently being rolled out, with completion estimated by end of February 2000. • The application is being well received by clinicians and is having a positive impact on clinical care in Manitoba.	DPIN-ER software is a custom development and is not commercially available on the market. The software and the underlying database would have to be modified to integrate with a commercially available system that manages electronic patient records.	$3,915	DPIN-ER is a working, deployed, application software and as such it has intrinsic value. However, in order to determine if the application truly meets the user requirements and brings value to the organization, it would be necessary to conduct a project close-out evaluation.

Table 12 - HIN Potential Product Use (Continued)

VENDOR AND DEPARTMENT SUPPLIED INFORMATION				High Level Review Comments (Deloitte & Touche)
Product	**Description**	**Potential**	**Cost (In 000's)**	
Target Architecture	• Report • Standards and processes for development of the HIN. Contains fundamental technical compliance for the purchase and development of future HIN applications. **Status:** • Final reports accepted by Manitoba Health on July 14, 1997. • Software development halted on November 26, 1998.	This information can be used as a basis for RFP's and for design specifications. These standards could be adopted across the entire health sector that the Health Information Standards Council currently has under development.	$403	The HIN vision implies that the connectivity agenda is at the forefront of the health information objectives. It follows that any deliverable which is aimed at defining and implementing standards and at deploying standards infrastructure would serve the overall health information objectives. For this reason, the Target Architecture, the Infrastructure Requirements and the Infrastructure Implementation deliverables may be of future use to the HIN. However, given that some of these deliverables are over one year old, it would be prudent to conduct a quality review of the architecture prior to implementing them.

Table 12 - HIN Potential Product Use (Continued)

VENDOR AND DEPARTMENT SUPPLIED INFORMATION				High Level Review Comments (Deloitte & Touche)
Product	**Description**	**Potential**	**Cost (in 000's)**	
Infrastructure Requirements	• Next level of detail below Target Architecture • Reports • Standards, implementation plans and specifications for the implementation of the health information network. Used in the development of the Department of Health, 300 Carlton Street data centre. **Status:** • Plans and specifications accepted April 1998. • Software development halted on November 26, 1998.	• The original "buy" decision for the network was changed to a "build" decision then further changed back to a "buy" decision. • Common software routines (e.g. Security, transaction login and audit) • Detailed technical standards	$3,804	See Target Architecture Deliverable.

Table 12 - HIN Potential Product Use (Continued)

VENDOR AND DEPARTMENT SUPPLIED INFORMATION				High Level Review Comments (Deloitte & Touche)
Product	**Description**	**Potential**	**Cost (in 000's)**	
Infrastructure Implementation	• Next level of detail below requirements • Reports, software ("common services"), tender (RFP) support services • Standards, implementation plans and specifications for the implementation of the HIN. **Status:** • Work development halted on November 26, 1998.	Common services software provides services to a wide variety of HIN applications. Usefulness of these common services depends on the overlap with functionality identified in commercially available enterprise health care management systems, and applications.	$8,760	See Target Architecture Deliverable, above.
Rate Increase	• 8% per agreement		$1,213	This is simply a rate increase and will bring no value to the future implementation of a health information network.

Table 12 - HIN Potential Product Use (Continued)

VENDOR AND DEPARTMENT SUPPLIED INFORMATION				High Level Review Comments (Deloitte & Touche)
Product	**Description**	**Potential**	**Cost (in 000's)**	
General Facilitation	• 20 Guiding Principles • Computer screen look-and-feel • Public/media relations **Status:** • Final reports accepted by Manitoba Health on January 15, 1999. • Software development halted on November 26, 1998.	Potential to continue dialogue with stakeholders regarding health information technology.	$1,102	It is unlikely that the results of the facilitation sessions will be of use to a future health information network implementation. This deliverable includes a standard "look and feel" definition; this could be useful in the building of the network user interface. A quality review of this deliverable would determine its usefulness.
Physicians and Primary Care	• A report • 6 specific modules opportunities were identified **Status:** Report delivered February 9, 1998	The opportunities listed in this report need to be reconciled with the regional integrated health information systems strategic plan (RIHIS) report, commissioned by the, then, WHA regarding community and long-term care (September, 1998) wherein 46 modules were identified.	$505	In general, the Physicians and Primary Care deliverable as well as the Community Health deliverable have to be integrated within the overall information system strategy for the Regional Health Authority (RHA). It is unclear if the existing deliverables will be useful within the integrated strategy for the RHA.

Table 12 - HIN Potential Product Use (Continued)

VENDOR AND DEPARTMENT SUPPLIED INFORMATION				High Level Review Comments (Deloitte & Touche)
Product	**Description**	**Potential**	**Cost (in 000's)**	
Community Health	• A report • 8 specific opportunities were identified **Status:** Report delivered February 9, 1999.	The opportunities listed in this report need to be reconciled with the regional information systems strategic plan (RISSP) report, commissioned by the, then, WHA regarding community and long-term care (January, 1999) wherein 57 modules were identified.	$599	See Physicians and Primary Care Deliverable.
DPIN-HP	• Feasibility Study • Answers the question: should the retail pharmacy drug profile system be extended to capture prescriptions filled in hospitals? **Status:** • Study completed. Answer: Yes • On hold since July 10, 1997	Expanding the system would fill in the information currently "missing" from a patients drug profile, namely the drugs dispensed to a patient in a hospital or by a hospital pharmacy.	$96	As stated earlier, the DPIN application can be of use to the overall HIN vision. However, the concept of extending the functionality of the DPIN must be balanced against other HIN priorities. This will be achieved only by developing an overall strategy for the HIN.

Table 12 - HIN Potential Product Use (Continued)

VENDOR AND DEPARTMENT SUPPLIED INFORMATION				High Level Review Comments (Deloitte & Touche)
Product	**Description**	**Potential**	**Cost (in 000's)**	
Health Card	• Report (draft only) • Consumer acceptance surveys, technology options, communications strategies **Status:** • Draft report delivered November 26, 1998	This work should be taken under advisement if there is a desire to move forward on a consumer card.	Included in Infrastructure Implementation cost above	The consumer card technology is not considered to be the best or only solution to the current health sector requirements. This deliverable probably has limited use to future health information network implementation.

6.2 PERFORMANCE

What is the project performance on timely delivery, on budget performance?

Based on our evaluation, it appears that little of the work delivered to date on this initiative will be useful for a contemporary health information network. The most useful deliverables appear to be the deployed drug prescription management system, functional specifications for potential systems, some technical architecture documents for system infrastructure, and a number of feasibility studies for future systems.

For the Department of Health, the future value of the existing deliverables is best defined within the context of a new health information network vision and strategy.

Table 13 below presents the financial estimates for the Health Information Network Initiative.

Table 13 - HIN Financial Estimates ($000's)

Product	1996/ 1997	1997/ 1998	1998/ 1999	1999/ 2000	Total
Target Architecture	$403	-		-	**$403**
Public Communications	$54	$33	$7	$67	**$161**
General Facilitation Services	$208	$294	$195	$110	**$807**
Drug Program Information Network (DPIN)	$95	$1,230	$437	$2,219	**$3,981**
Infrastructure	-	$3,321	$483	-	**$3,804**
Physician Component	-	$322	$183	-	**$505**
Diagnostic Services Information Network (DSIN)	$435	$291	$3,330	$655	**$4,711**
Community Health	-	-	$544	$55	**$599**
Total Approved Work	**$1,195**	**$5,491**	**$5,179**	**$3,106**	**$14,971**
Additional Work[12]	-	-	-	**$14,102**	**$14,102**
General Facilitation and other	-	-	-	**$636**	**$636**
Total	**$1,195**	**$5,491**	**$5,179**	**$17,844**	**$29,709**

Source: Government of Manitoba

[12] Corresponds to the Amending agreement currently awaiting Government consideration

What is the future expenditure on deliverable vs. initial concept, costs, etc.?

In light of the long-standing and unresolved project management difficulties and the contemporary thinking on health information management, the health information network should be re-defined in its entirety. Future costs associated with the delivery of the health information network have to be re-defined within the context of a renewed and redefined vision and strategy. At a minimum, the future expenditures are directly linked to the resolutions of the current arrangements with the vendor. Within this context, it is difficult to define the future expenditures for the delivery of the health information network.

GENERAL EVALUATION

The evaluation of the HIN against the principles set out in our evaluation framework is presented in Table 14 on the next page.

Table 14 - HIN Detailed Evaluation

	Business Direction	Accountabilities	Integrated Project Management	Risk Management
Health Information Network (HIN)	When first initiated, in 1995, the HIN vision was innovative - to electronically connect the health care providers of Manitoba so that they may exchange clinical information, administrative information, and perform assessments of program effectiveness based on empirical data in order to improve health outcomes. However, the health environment has undergone great changes since the initiation of this project; the vision and strategy now need to be revisited to include current directions in the health sector, such as the advent of the Regional Health Authorities and new technologies.	The life of the project has been over four years. The government's Executive Director position was unfilled for a period of three years, resulting in lack of direction and focus within the project. The government's current Executive Director has been in place for just over a year and is currently reviewing the project directions and structures.	The project had a clear vision, however the "roadmap" to deliver the vision was not well defined. As a result, it seems that the project developed a number of isolated components, without a clear understanding of their overall contribution to the health information network vision.	The health sector is a dynamic and ever-changing environment. In order to meet its objectives, the project needs to be able to adjust and adapt to changing needs. For this reason, the project needed a risk management process, with periodic reviews and flexible adjustment mechanism.

In terms of the project life cycle, the HIN project demonstrated:

- *Poor Project Initiation processes:* the HIN had a clear vision, but did not have a clear understanding of its components. The project did not seem to have a well-articulated business case aligned with the government's service priorities.

- *Very Poor Project Planning processes:* the HIN had a very poor project governance structure; most notably the government's executive director position remained vacant for 3 years. Although the project included a series of mini work-plans for individual components, the master plan linking and integrating all these specific components into a single vision was not approved by the government.

- *Very Poor Project Execution:* the project suffered from poor project management by the government. The project was not tracked and measured against plan. We found no evidence of vendor management processes commensurate with projects of this size and complexity.

In summary, this initiative has not been successful. The government – vendor relationship has not met the original expectations of either party. Moreover, the recent trends in health care information management and governance will require a complete re-thinking of this initiative.

6.3 GO-FORWARD STRATEGY

What are the pre-requisites for success on the project?

The HIN project needs to have the following principles addressed in order to maximize the chances for the overall project success:

Business Direction: When first initiated, in 1995, the project was visionary. However, health information technology has undergone great changes since the initiation of the project; the vision and strategy need to be revisited to include current directions in the health sector and the advent of the Regional Health Authorities.

Accountabilities: It is critical that any future initiative be provided with a clear governance structure reflected the RHA's role as well as a defined accountabilities framework.

Integrated Project Management: The project had a clear vision, however the "roadmap" to deliver the vision was not well defined. As a result, it seems that

this project has developed a number of isolated components, without a clear understanding of their contribution to the health information vision. The value of these deliverables for future use is questionable. Any future strategy will need a new "road map".

Risk Management: The health sector is a dynamic and ever-changing environment. In order to meet in objectives, any new strategy needs to be able to adjust and adapt to changing needs. For this reason, a risk management process, with periodic reviews and flexible adjustment mechanism, will be critical in any future initiatives.

Is the project still relevant? Will the benefits be realized?

The federal and provincial governments are very active in the area of health information management and networks. The health information technology environment has undergone great changes since the start of this particular initiative; therefore, whether the $30 million plus apparently incurred by the vendor will produce any equivalent benefits to the Province of Manitoba is doubtful. In summary, the vision and strategy of this initiative need to be completely revisited.

RECOMMENDATION

This particular health information network initiative has produced little in support of emerging health information technology trends. We recommend that the project be stopped. We also recommend that the Government redefine its health information needs and, in light of trends in Canada and in health care information generally, re-start an initiative in health information.

7. BETTER METHODS INITIATIVE PROJECT

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STRICTLY CONFIDENTIAL

A High-Level Review of

Better Methods

February 1, 2000

G. BRAHA & ASSOCIATES LTD.
Consultants in Management and Information Technology

Table of Contents

I. Background

As part of the independent review into the state of the province's finances, the Government of Manitoba requested Deloitte & Touche LLP to assess the investment in five major government corporate information systems initiatives.

Deloitte Consulting, a member firm of the international organization Deloitte Touche Tohmatsu, had serviced one of these systems initiatives, known as Better Methods. It continues to perform an advisory and delivery role on that project. To maintain complete assignment objectivity, Deloitte & Touche LLP retained our firm, G. Braha & Associates Ltd., as an independent consulting organization to review Better Methods.

The following report describes our findings and recommends specific actions for moving forward with the project.

About Better Methods

Manitoba launched the Better Methods project in 1995 with the goals of re-designing business processes and systems to improve civil service efficiency and effectiveness, reduce paper flows, and concurrently address Year 2000 limitations on several of the government's central automated administrative systems.

Meeting these goals required new software and computers. Eight legacy computer systems were to be replaced with one integrated system. By April 1999, an integrated software solution known as SAP R/3, and consisting of core accounting, procurement, and human resource functions had been implemented across all provincial government departments, Special Operating Agencies, the Legislative Assembly, the Executive Council, and several commissions and boards. Achieving this milestone coincided with the government's Desktop Initiative that modernized all departments' desktop computers.

The implementation of SAP software, and its host computer hardware, is believed to have helped solve the Year 2000 problems for the government's central systems. This, by itself, would be a significant achievement.

To get to the April 1999 milestone, Better Methods had progressed through three phases. A current-state analysis (i.e., discovery) phase was completed in early 1996. A business case development phase, completed in 1997, also identified potential software solutions. SAP was selected through a national tender process as Better Methods' enabling technology. A scoping, planning, development and implementation phase began soon thereafter.

So far, the project has drawn on the experience of many staff from across government, including approximately 140 staff seconded to the project at various stages of the development and implementation effort, as well as several consultants and computer hardware and software vendors.

About SAP

SAP is a company considered to be a world leader in supplying enterprise software that helps organizations integrate business processes. The company is headquartered in Walldorf, Germany.

SAP software is made up of many components including comprehensive financial, logistics, human resources, and quality management systems. The software provides combined functionality and reporting capabilities, helping to ensure that data is entered only once and that it flows appropriately throughout the various system components (hence, the efficiency). SAP software design attributes provide organizations with the potential to collect, share, and transform cross-functional data into critical business information for managing operations and assisting in decision-making. Within the context of government, this implies that SAP can provide a means for better managing government programs and resources.

The software is also designed to use industry-specific best business practices derived from the experiences of the large SAP client base, and to support an organization's ability to create *agility* enabling fast responses to new business demands.

SAP software is sold as "licenses" to client organizations. The software has been implemented in 19 different industries, including the government sector. The company boasts a client base of more than 12,000 organizations and 10 million licensed users around the world.

II. Review Purpose, Scope and Methodology

The main purpose of our review was to provide a synoptic perspective of the project to the government and to identify areas of opportunity and risk with forward aspects of the project. Readers should be aware that applying these high-level findings for purposes other than that denoted here may not be appropriate.

Our review was limited in scope and time, and therefore was performed at a high-level. We concentrated on Better Methods deliverables relating to the implementation of the SAP system. We specifically focused our efforts on answering the following five questions:

1. What is the current status of the Better Methods project in progress and costs (i.e., what has been delivered and at what cost)?

2. What key deviations exist from original concept and intent, scope, and timing?

3. What are the intended deliverables looking forward, their estimated costs, and their associated risks?

4. What are the pre-requisites for success on the project?

5. Have the benefits been quantified, and will these be realized?

To provide a balanced assessment, we felt it important to gather information and opinions from five stakeholder perspectives: a central agency view represented by Treasury Board, the Provincial Auditor perspective, the perspective of Better Methods management, the consultants' perspective represented by Deloitte Consulting, and departmental perspectives. In the latter case, we wanted to listen to the experiences of departments that have had a positive and a negative experience with the project to-date.

We interviewed senior management from Better Methods, the Province's Chief Information Officer, the Secretary and Associate Secretary to Treasury Board, the Provincial and Assistant Provincial Auditors, and the Chief Financial/Administration Officers for the Departments of Justice and Agriculture. We also interviewed the Deloitte Consulting Engagement Partner assigned to oversee that consulting firm's services on the development and implementation phase of the SAP project.

We reviewed several background documents related to Better Methods and collected from the above stakeholders.

We stress that the investigative work we carried out was that of a high-level, time-contained review, and not a formal audit. Accordingly, we did not perform a detailed examination of working papers, but relied on the information collected during our interviews complemented by reading relevant background documents. We caution that some of our observations and conclusions could be further qualified and even revised based on a lengthier, and more detailed assessment of the project.

III. Findings Highlights

Our key findings suggest that the Better Methods/SAP project:

1. Was founded on a clearly articulated (and documented) project vision and scope, endorsed by the most senior levels of government.

2. Had a well-defined approach that included the recognition for strong project leadership and sponsorship, training as an investment, managing communications and change, changes to existing regulatory and policy frameworks, managing and measuring performance, managing risks formally, establishing clear goals, and invoking and benefiting from external expertise.

3. Benefited from a streamlined governance structure that was formally defined, and included cross-representation from many senior levels of government including direct reporting relationships with, and rapid decision-making from, these senior authorities.

4. Has positioned the government to adopt more contemporary accounting practices.

5. Was not able to meet all of its objectives within the original intended timeframe. Deviations from the original plan have occurred through deferrals and reductions in scope. Much work remains to be done, including approximately two dozen sub-projects.

6. Has lagged behind in achieving organizational and people "transformation", including realizing revised business practices, organizational realignments, new staff skills and operating procedures. Attaining the promised benefits inherent in SAP lies in these areas, more so than in implementing additional or deferred functionality.

7. Has not yet realized the software's promised "flexibility" to enable fast response to changes in government operations. Manitoba has found that changes in government procedures and reporting structures necessitate significant time-consuming modifications to the SAP environment.

8. Revised an updated "baseline" budget approximately one year into the development and implementation phase to project a 47% increase in anticipated expenditures. The original estimate set in 1997 at $32 million, was adjusted a little later to $38 million, and ultimately revised

in 1998 to approximately $56 million. Total costs to mid-November 1999 have reached $53 million, and could attain $60.1 million by March 31, 2000[1]. Better Methods expenditures have been tracking closely with project estimates developed in 1998, staying within the $56 million allotted, notwithstanding that some system functionality has been deferred to future implementation.

9. Could cost from $8 to $10 million per year, at least for the next two to three years, to operate the system and broaden the SAP application. In addition to this amount, funds may be required to accommodate major hardware upgrades and data warehousing and archiving projects. The SAP system could therefore cost more than $30 million to operate and expand over the next three years.

IV. Current Status

1. What has been delivered

Those Manitoba government organizations that were scoped (targetted) to receive SAP as part of the April 1999 rollout have all been connected to SAP as of April 1, 1999.

SAP functionality implemented to-date includes:

- ***Financial administration functions*** such as payment processing including salary advances and severance pay, accounts receivable summaries, general ledger, asset management, financial forecasting, bank reconciliation, commitment accounting, and funds management. Many standard reports and some custom reports are currently available. The asset management component is a new automated functionality to government.

- ***Organizational and human resource administration*** including many functions related to position management, recruiting, personnel pay and benefit administration[2], and electronic data transfer interfaces to such organizations as Manitoba Blue Cross, the Manitoba Government Employees' Union, the government's clearing bank, and

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[1] *All costs shown in this report include both internal and external expenditures. Of the $56 million projected, approximately $16 million are internal costs.*

[2] *There are over 1,400 wage types/categories implemented in the Payroll component.*

Canada Savings Bonds. Approximately 1/3 of custom reports, deemed as necessary, are currently available. Data is current as of November 1998[3].

- ***Procurement administrative functions*** including goods vendor data maintenance and performance evaluation, procurement requisitioning, tender and award administration, and goods receipt management.

2. *What it has cost*

Internal and external expenditures on the project to November 1999 total approximately $53 million. These expenditures coincide with project estimates of $56 million derived in 1998.

The $56 million projected costs represent an increase of $24 million or approximately 75% from the original budget of $32 million set in 1997, and $18 million or approximately 47% from a revised "baseline" budget established a short time later. This includes monies for computer equipment and software (26% of projected costs), consulting fees (46%), staff salaries (15%), operating costs (7%), staff training (4%), interest charges (2%), and a contingency fund (re-absorbed within the above estimates). These costs do not include expenditures associated with upgrading users' desktops through the Desktop Management Initiative to allow users online access to SAP and other applications.

The $38 million "baseline" budget was increased once the Better Methods team had a better appreciation of the level of scope they were absorbing, and the corresponding level of resources that would be required, to achieve stated deliverables. They also had secured more reliable pricing on required hardware and software. The increase to $56 million, projected about one year into the development and implementation phase (Phase III) of the project, has also been attributed to:

- Finalization of contracts with Deloitte Consulting and SAP.
- An extension of the Deloitte Consulting contract to provide support beyond the April 1999 implementation date, help stabilize the system, and assist in developing interfaces with existing departmental systems.

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[3] *Employee data prior to November 1998 remains with the legacy systems. Trend analysis requires input from both sets of systems---at least for awhile.*

- Staff and operating costs that went beyond initial projections, including ensuring there were sufficient staff seconded from departments, and coverage for overtime, to meet the April 1999 deadline[4].
- Additional SAP licenses required to meet the province's business needs.
- End-user training, capitalized interest, and contingency funds that were not previously budgeted, including funds to cover a contract with Red River Community College to provide a substantial portion of end-user training.

3. *What has been deferred*

The following functions have been deferred to a post-April 1999 implementation due to constraints encountered by the Better Methods team in time availability, technology capability, the higher priority of meeting Year 2000 imperatives, and corporate interfaces that needed to be developed as part of the April 1999 rollout:

- ***Financial administration functions*** such as calendar and year-end processing, detailed accounts receivable[5], cash flow forecasting, estimates and estimates management[6], financial allocation reorganizations, electronic funds transfer[7], and some further general ledger, commitment accounting, and funds management functions.

- ***Organizational and human resource administration functions*** such as employees skill/competency assessment, certain forms of staff scheduling, posting of online employment notices, salary planning, and an interface to the Workers Compensation Board.

- ***Administrative functions*** for the procurement of services and the ability to approve purchase requisitions online. Current purchase

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[4] The original project budget and revised "baseline" were founded on an understanding that Better Methods would be required to cover half the salaries of "backfill" staff, compensating departments that supplied staff to the project. Better Methods was ultimately directed by Treasury Board to cover full costs of "backfill" staff.

[5] A pilot was implemented in Government Services in December 1999.

[6] This has been deferred to be implemented following an upgrade of SAP to release 4.6 for two reasons: (1) current and projected workloads will prevent an earlier implementation, and (2) SAP release 4.6 is reported to offer a much superior estimates functionality.

[7] SAP has been configured for electronic data interchange (EDI), but this function has not yet been enabled.

data for 1999/2000 is being captured under SAP. History data remains in legacy systems.

- ***Approximately two-thirds of custom reports*** corresponding to the above functions. These reports are in various stages of development[8].

4. *What was considered out-of-scope*

Although the following functions are part of SAP software, they were not viewed as "pressing" or having "immediate priority". They were therefore excluded from the original project vision and scope. That is, they were not configured or enabled within SAP. In some instances, the functions were covered by existing software that users considered quite adequate[9]. In other instances, users made a strong case for including functions such as Inventory Management in scope, but Better Methods felt the need to contain project scope to meet other deliverables with broader user appeal and higher priority. The following functions do represent opportunities for consideration as future implementations:

- ***Financial administration functions*** such as the ability to process pre-authorized and electronic payments (SAP configured to support EDI, but not yet enabled), manage liquidity and capital structuring, and functions specific to the sales and distribution industry sectors.

- ***Organizational and human resource administration functions*** such as staff training planning and management, workflow, staff reward and recognition, grievance tracking, employment equity tracking (have developed some reporting around this), and health and safety monitoring.

- ***Logistics functions*** such as inventory management, schedule agreements, and procurement quota arrangements.

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[8] *Better Methods expected that standard reports provided by SAP would suffice in meeting users' reporting requirements. Users' demands for custom reports triggered a new set of development activities that was not part of the original SAP rollout plan.*

[9] *For example, Treasury Division had selected Selkirk Technologies' Treasury Manager software as, in their opinion, providing a better and more immediate "fit" to their requirements.*

5. *Deviations from original concept, scope, and timing*

The original intent and concept of the project was to address four specific and compelling requirements in the Manitoba government:

1. To simplify and streamline corporate management processes in a manner that maximizes their value to all stakeholders, including being responsive to customer needs.

2. To provide better information to support informed decision-making at all levels of government such as using the information to measure and assess accomplishment of program goals.

3. To achieve Year 2000 compliance for the core automated systems that were supporting the government's corporate management processes.

4. To provide Manitoba government employees with the opportunity to acquire and apply new skills in more meaningful roles, oriented more towards accomplishing outcomes than processing transactions.

(a) What has been accomplished (what worked well)

The imperative to achieve Year 2000 compliance was a key driving factor. To address Year 2000 issues and for other business reasons, it was essential to get core financial, procurement, and human resources/payroll functionality implemented by April 1999. This was the "burning platform" that drove the project. It forced containment and some reduction in scope. The Better Methods team, working with departments and consultants, met the implementation target date. Given that the majority of team members and departmental staff had never worked in an integrated enterprise information technology project before, let alone one of this magnitude, achieving the April 1999 implementation is a tribute to their diligence, commitment, and perseverance.

Implementing SAP necessitated an extensive re-design of business procedures, systems, and new skill sets to accommodate the new environment. Staff learned many new computer and project skills. Prior to SAP, computer literacy among many staff was very low. Also, staff had to learn new concepts in accrual accounting.

According to reference checks conducted during software selection and information obtained through the Americas' SAP Users' Group (ASUG), Manitoba is the first public sector implementation of combined SAP financials and human resources/payroll in North America. This September, Manitoba's Better Methods project was nominated as one of five finalists in a Distinction Awards program sponsored by *Technology in Government Week* publishers.

The SAP system has helped to improve cash management because it requires all expenditure commitments to be recorded up front. Better Methods management indicated that some paper transactions have been eliminated from the central Finance function.

Users we interviewed told us that transactions are processing accurately and that system availability and reliability is high[10].

Manitoba's Desktop Management Initiative (DMI) was a key critical success factor. DMI acquired and deployed modern Year 2000-compliant personal computers, office automation software, and a networking infrastructure throughout government to support government-wide corporate initiatives such as Better Methods. DMI also provided the necessary fundamental computer training to all staff receiving the new computers. The April 1999 rollout of SAP depended significantly on DMI completing its rollout and staff training on time. Without DMI "preparing the stage", SAP would not have been implemented as smoothly. One could also take the view that Better Methods helped to prompt/stimulate the requirement for the Desktop Management Initiative.

Other factors that contributed to reaching the April 1999 milestone included:

- The in-depth involvement of the Province's Controller whose knowledge provided a broad perspective and understanding of Manitoba's financial operations and complex payroll

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[10] *Example transaction volumes handled through SAP from "go-live" in April 1999 to December 1999 include approximately 18 thousand paycheques issued bi-weekly, 400 thousand invoices processed, 45 thousand procurement transactions, and 223 thousand cheques processed. The system was also used to manage approximately 2500 contracts/agreements, issue over 900 tenders to MERX (a national electronic tendering service), and maintain a database of approximately 53,000 suppliers to the Manitoba government.*

structure.

- Strong centralization of the Manitoba government administrative environment. (A decentralized, more autonomous operating environment could have made the SAP implementation much more challenging.)

- A productive and close working relationship with the consultants.

- Early and consistent involvement of departmental user representatives.

(b) What deviations have occurred from original scope?

The original scope for the SAP April 1999 implementation included the following deliverables that were either offset by other initiatives or deferred to a post-April 1999 initiative:

- Incorporating the province's community colleges.
- Direct employee access to the Human Resources (HR) component for personal inquiry purposes.
- Full reach of technology provided to all government managers.
- Sufficient training to allow for extensive HR analysis capability for departments and central government.
- Extensive corporate transformation in organizational and process aspects.

A decision was made in Phase III not to roll out SAP to the community colleges. The colleges, with the support of Manitoba Education and in recognition of the legislated requirements for the colleges to become more autonomous, decided that they should pursue alternate solutions[11].

The direct employee access to HR for inquiry purposes is not part of the current rollout.

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[11] *According to Better Methods management, Red River Community College (RRCC) is discussing with SAP officials the feasibility of developing a business process "integration lab" at RRCC, drawing on SAP to donate their software as part of SAP's university alliance program.*

Although executive financial officers and human resource directors have access to SAP, the majority rollout to program managers has not been attained under the current implementation.

Additional training is needed to extend user HR analysis capabilities.

The work left to do in corporate transformation, to take advantage of SAP's features, is extensive.

(c) What appears to be deviations in expectations

The current implementation is limited in scope of functionality. As noted previously, several functions have been deferred for implementation over the next two to three years. Among some users, the implementation is suffering through a bit of a credibility crisis. An "expectation gap" has formed in terms of what departments have so far received versus what they thought they would get.

At the outset, it was expected that a potential 2,750 persons would be using SAP. This included financial administrative staff and as well as departmental managers and other stakeholders (e.g., Treasury Board personnel). There are now approximately 1,400 users that have been given access to the system. Better Methods management anticipates that a full rollout will result in approximately 2,000+ users having online access within the next two to three years.

Although SAP has about 3,500 standard reports in its reporting suite, some departments indicated that these reports do not meet their information needs in the areas of budgeting, financial reporting, and control. They are requesting customized reports to meet their requirements. Custom reports tend to run much slower than the standard reports available through SAP and "tie-up" processing capacity on the SAP hardware. Better Methods has invoked a strategy to maximize the use of existing SAP standard report functionality and minimize the expense of custom report creation and maintenance.

Treasury Board staff are not using the system in any significant way. Reasons cited include a lack of reports they consider relevant to their needs, cash flow forecasting functionality not implemented, and finding interacting with the system to be "user-unfriendly".

Anticipated levels of knowledge transfer have not been achieved. Pressures to "go live" on April 1999 necessitated concentrating consulting services on implementation activities and away from

knowledge transfer. This shift in emphasis has limited the ability of in-house staff to fully operate the system. The Better Methods team is continuing to rely on consultants for specific knowledge.

Issues in system stabilization have been more complex and time consuming than originally anticipated, requiring additional training and effort.

Smaller departments with highly-decentralized functions appear to have had an "easier time", and more positive experience, implementing SAP. The larger departments, with higher transaction volumes and significant administrative centralization have experienced, and continue to experience, the most difficulties. Better Methods management suggests that the degree of difficulty encountered by departments is directly proportional to the level of effort expended by departments preparing themselves for the SAP implementation, their level of participation in the process, and the qualifications of people they assigned to the project. Findings for the departments we interviewed tended to support this suggestion.

Some departments are reporting higher-than-expected staff effort and workloads in using SAP for transaction processing, including additional effort in:

- Timekeeping.
- Adapting to new SAP processes---especially where new procedures work contrary to traditional ways in which a department has been "conducting business".
- Working through purchasing processes and its associated fine level of detail.
- Interrelating with processes implemented in SAP by other departments (e.g., Government Services) with whom departments interact.
- Manually assembling consolidated information available only in a fragmented fashion (either through reports and/or by going to several screens) to produce necessary summaries and roll-ups.

Departments have attributed the extra effort to several factors, including:

- Complexity and "inflexibility" (difficulties in adapting to change and correcting entry errors made).
- The requirement for more in-depth "accounting" and "financial management" knowledge, more formal training, and an extended "learning curve".

- Time spent waiting for formal SAP training while attempting to develop new and backup staff.
- Human-machine interfaces that are not as "user-friendly" as users would prefer.
- Corporate centralization of some functions, and devolution of several central finance responsibilities to departments.
- Slow system response times.
- Lack of custom reports.
- Security restrictions making it difficult to locate point-of-origin of some errors.
- Discrepancies in context and definitions among different departments.
- Being unable to easily summarize above the cost-centre level.

At least one department has allocated additional staff, extended part-time staff to full-time, and/or paid overtime to keep up with these functions. Some managers have related more time spent with staff addressing frustration, morale and stress issues attributed to the additional workload and process changes experienced by staff. "Compensating" or "work-around" sub-systems (e.g., Excel spreadsheets or duplicate paper files) have been introduced to achieve data manipulation and desired data outputs to meet specific users' requirements.

These occurrences may be streamlined once departments have had more experience with SAP, more end-user training is provided, and once managers are able to access the reports they need and able to exercise some streamlining in the processes. The majority of credibility issues, as noted in this section, relate to usability concerns, reporting complexity, and training---and not necessarily to functionality that has been deferred.

Some stakeholders lack the confidence that Better Methods will be successful in getting the system to a point where these stakeholders believe it should be, within the next two years. These stakeholders feel that the project has not progressed significantly since April 1999. Stakeholders are not always privy to Better Methods' continuing work, and should receive regular communications from Better Methods on project progress.

Extensive security and control measures have been introduced in SAP. However, a perception still exists among some users that the system is not as secure as it should be. Several stakeholders are concerned that their data could be compromised. The Provincial Auditor is concerned that because on-line approvals have not yet been implemented, the compensating paper systems may have insufficient controls. At the same

time, introducing online approvals could deteriorate system response time without a compensating upgrade in computer capacity. Better Methods is confident that the security that has been implemented is appropriate. They recognize, however, they still need to find time to perform an overall government review and analysis of security profiles and role definitions, as a means of identifying where controls need to be further tightened.

Better Methods has noticed a significant drop in calls to their Help Desk. This could be attributed to improved usability, but we were also told that some of this can be ascribed to departmental staff "giving up" on getting relevant help from the Help Desk or waiting too long to get through to the Help Desk.

Sizing the right computer configuration to meet government requirements has been problematic. Undersizing has plagued Better Methods, even though external expertise including the hardware's vendor have been extensively involved in the sizing process.

The training provided end-users, an average of three days per person, is deemed insufficient for a system of this complexity and requiring special skills.

Some target dates have been missed. Scheduled completion of the development phase of the SAP project for August 31, 1999 has not been met. Several stabilization issues have interfered with the project development phase winding down as quickly as anticipated. Users were advised that Accounts Receivable would be in place for September 1999, but only a pilot was implemented in December. One stakeholder was advised that on-line approvals would be in for October 1st, but this function is still not implemented.

V. Anticipated Forward Work and Related Costs

1. Nature of work (sub-projects)

The functionality achieved with the April 1999 SAP implementation represents only a subset of the functions and corresponding business transformation deemed necessary to achieve expected benefits. Several immediate and short-term initiatives require substantial planning and execution from the Better

Methods team and stakeholders. These include activities needed to successfully produce (in order of priority as expressed by stakeholders):

- Calendar and fiscal year-end processing.
- Timely reporting functions and related end-user training.
- Roll-out of SAP licenses and training for government managers.
- Detailed Accounts Receivable.
- Cash flow forecasting.
- Outstanding configuration requirements.
- A "test" environment.
- An improved Help Desk function.
- Payments for Manitoba Education and Training beneficiaries, absorbing a devolution of Human Resource Development Canada training administration to the Province.
- Pro-active, knowledgeable, and sophisticated network operations/management[12].
- Transitioning from a "development" environment to an "operational" environment.
- Upgraded security profiles, role definitions, and overall security procedures including ensuring that sign-on accounts are removed when staff leave the government's employment.
- Further enhancements to audit trails.
- Development of a disaster recovery plan.

As a minimum, achieving the above will require extending staff and operating resources, extending the consulting contract(s) to provide for continued external expertise, and incurring continued hardware lease costs. Cost implications are discussed later in this report.

The following functionality is being contemplated for implementation and/or broader application in the 2000/01 and 2001/02 fiscal years:

- **For 2000/01**

  - User-friendlier human-machine interfaces and access to information.
  - Further timely reporting functions, including planning and deploying a reporting "data warehouse".
  - Data archiving.

[12] *This would include SAP and hardware performance tuning, capacity planning and configuration management, optimization of operations, development of operating procedures, better handling of code versioning, and detecting security violations.*

- Planning for workflow/business transformation.
- Planning for the next SAP software upgrade (Release 4.6).
- Delivery of remaining deferred capabilities.

- **For 2001/02**

  - Workflow implementation with related process improvements.
  - Detailed estimates.
  - EDI/EFT.
  - Employee self-service.
  - Next SAP release (4.6) and corresponding hardware upgrade.

In addition, the government may want to introduce the following functions at a later date:

- Corporate procurement planning.
- Electronic commerce arrangements with vendors.
- Inventory management for departments maintaining significant government inventories (such as Highways and Transportation).
- Accommodation management (such as Government Services).

2. *Relevancy of the work*

Without proceeding to implement these additional functions and draw on the capabilities of SAP through these functions, the Province will have realized only the implementation of a very expensive Accounts Payable, Payroll, and Purchasing system; and one that would have wasted potential.

SAP is a complex system, developed and implemented in a hybrid software and hardware environment. The application software, operating system, database management system, and hardware all originate with different manufacturers. These must be "melded" into a cohesive functioning "engine". Operating and managing such a hybrid environment is not simple. It requires sophisticated operations management expertise and pro-activity.

An integrated system has been delivered that, properly evolved and applied, should eventually provide better information. SAP offers a foundation on which to:

- Build integrated management reporting and online monitoring, providing an opportunity for more timely, integrated decisions.
- Further integrate with other IT initiatives that have financial and HR implications, such as the Better Systems Initiative (BSI) and future forms

of a Manitoba health information network/system, as well as other entities government owns.

- Have government positioned to take advantage of some of the upcoming technology functionality such as electronic commerce with government suppliers.
- Leverage the other SAP installations in the Province.

3. *What will this additional work cost*

Better Methods management anticipates that calendar and year-end processing, extending consulting services, and continued hardware lease costs to March 31, 2000 will require approximately $4.2 million in additional capital investment. Of this amount, $3.1 million will be drawn from contingency funds set aside in the $56 million project cost forecast.

Tracked internal and external project costs, as at March 31, 1999 were $44.8 million[13]. Capital investment authority for 1999/2000 was set at $6.7 million for the period of April 1 to August 31, 1999. The additional $4.2 million described above for the period of September 1, 1999 to March 31, 2000 will bring the total capital investment expenditure forecast for 1999/2000 to nearly $11 million.

These costs represent the incremental resources for continued development. Over and above these are costs for operating the system. $4.5 million has been set aside for operating SAP in the current fiscal year, bringing the total capital and operating forecast for 1999/2000 to $15.4 million.

Staff resource and cost projections for operating SAP in subsequent years, initially estimated at 31 FTE's and $7.5 million annually, are now being forecast at 41 to 43 FTE's[14], plus some external consulting assistance, and from $8 to $10 million annually.

Better Methods management believes that this level of annual funding and resources should adequately provide for sustaining the present SAP environment, expanding the number of users, executing other incremental

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[13] *Costs that would not be typically tracked to the project include such activities as the time spent by departmental managers and staff, not seconded to the SAP project, dealing with SAP-related requirements definition, implementation, training, and human resource management activities both prior to, and post, the April 1999 implementation.*

[14] *Breakdown is as follows: 4 Managers, 18-19 business/systems analysts, 8 analysts on business transformation, 5 operations (BASIS) staff, 3 administrative staff, and 2 security administrators.*

growth work such as implementing deferred functionality, and delivering further end-user training. Additional capital funding would be required to cover:

- Major upgrades to SAP software, and external consulting assistance with such upgrades.
- Hardware lease costs that may accompany necessary host hardware upgrades.
- Developing a reporting data warehouse.
- Implementing archiving functionality.

Rough cost estimates have been derived for these items. However, until thorough planning and assessment for each of these items is carried out, real and complete costs are unknown. For this reason we are not reporting here an amount of additional capital funding that would be required---as this would be a "wild guess", at best.

The CIO's office has examples that suggest that other organizations are running SAP with fewer staff, although some upward allowance must be made to these numbers to compensate for the continuing need for government staff to thoroughly learn SAP.

4. Risk factors

The project faces many potential risks going forward. Aside from deferred functionality that needs to be implemented to ultimately realize the full potential of SAP software, the following represents a non-exhaustive list of potential risks to the project:

(a) Lack of time

- Allowing insufficient time for project staff, departments, and the SAP system to stabilize could affect staff retention, morale, and productivity. Losing staff would mean losing valuable knowledge and skills that have been acquired over the course of the past two to three years. External organizations contemplating the implementation of SAP could target the government's skilled SAP staff in their recruiting efforts.

- Deferring analysis of the statistics that come out of the Help Desk, in favour of other perceived priorities.

- Better Methods receiving Revenue Canada's tax tables and/or related SAP tables with insufficient lead-time to promptly and

properly plan, integrate, and test these tables for calendar year-end and new-year processing.

(b) Inappropriate project structure and delegation of authority

- Placing the ongoing central SAP operations group in any one department that does not have, or is not seen to have, a broad enough mandate and/or incentive to attend to the interests of all stakeholders.

- Users under-represented in defining business requirements, as the project moves forward.

- Project managers without the delegated authority to acquire the right resources at the right time in a timely fashion.

- Not providing the project with a new sense of identity and/or inappropriately classifying positions commensurate with the accounting knowledge and activities they need to exercise in the SAP environment. Either of these can adversely affect staff morale and retention.

(c) Changes in the technical environment (some of which are outside Manitoba's control)

- Underestimating the impact that SAP's and other vendors' corporate directions could have on Manitoba's implementation. For instance, SAP announced recently that it is adopting IBM's DB2 as its internal development and production database, replacing Oracle. Manitoba implemented SAP with Oracle as the database management system. A detailed assessment will be needed to determine if SAP's new direction could have substantial time and cost implications to the government in any future upgrades/migration of current SAP data to a new database environment.

- Upgrading to the next significant release of SAP without fully evaluating the impact of any changes in functionality and corresponding requirements for new user training. SAP 4.6 may also demand some extensive re-programming of existing application functions.

- Underestimating the impact of hardware upgrades. The government is currently hosting the top end of the Hewlett-

Packard computer hardware product line for this series of computer. A new line of computers could have many new complexities, and could require special expertise and an extended time to implement properly.

(d) Lack of sufficient skills and knowledge

- Continuing to perform poorly in attempts at sizing the "right capacity" of hardware for the government's SAP needs.
- Missing timely and effective delivery of training to new staff to address normal turnover[15].

(e) Under-estimating the impact of reporting

- Developing an effective custom-reporting infrastructure in SAP to meet departmental reporting needs may be much more complex an undertaking than originally envisioned. Custom-building reports introduces more complexities to SAP operations not only in terms of having to dedicate scarce resources to developing the custom reports, but also in terms of effecting future version controls
- Administrators taking on some of management's decision-making responsibilities, and going on "gut-feel", in the absence of management reporting and management users on the system.

(f) Lack of capacity

- Insufficient or ineffective effort devoted to knowledge transfer, resulting in continuing reliance on consultants to provide knowledge.
- Understaffing and/or under-resourcing Quality Assurance, system deployment, Help Desk, training, and other initiatives targeted at process refinements.
- Providing insufficient capacity in the SAP development and testing computer environments to match the production environment.

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[15] *Better Methods is drafting a strategy to address the long-term enterprise-wide SAP user training needs.*

- Attempting to undertake forward sub-projects without the necessary assessment and planning software tools.

(g) Other risks

- Potential risks not being managed pro-actively.
- Government officials not appreciating that re-engineering of business processes is where the real productivity (and, hence, benefits "pay off") will be achieved.
- Making access to information so restrictive between departments and between users within departments that roll-up and sharing of data becomes nearly impossible. Without the ability to share relevant data, opportunities for improving programs, processes, and outcomes may be missed.
- Insufficient attention paid to ensure security of access, as the system expands with the introduction of new functionalities.
- Foregoing quality assurance activities to attend to other tasks deemed to have higher priorities.

Given the revisions that have taken place in estimating effort and costs on this project, the government should require that any new estimates are accompanied by a very thorough analysis and detailed plans of the activities and resources required to accomplish new deliverables. Staff should be held accountable for the estimates they prepare.

Learning project management, operations management, and the SAP product, have been, and continue to be, a "work-in-progress" for the Better Methods team. At this time, the team and the team's leadership do not possess the experience and probably most of the knowledge associated with the forward SAP initiatives---although one can assume that what they learned over the course of the project to-date should serve them well in future undertakings.

Having gone through an extremely demanding (and most likely exhausting) development and implementation project, the government needs to formally assess the "sense of urgency" and "energy levels" of the team and its leadership to take on the forward initiatives identified earlier in this section.

VI. Pre-requisites for Success Going Forward

Success in achieving this project's intended outcomes depends on many factors. To continue the Better Methods Initiative and its complementary SAP project, some fundamental actions are required. These actions can increase the probability of ultimate success with the project, and contribute towards the realization of anticipated benefits. Minimal action steps are as follows:

1. **Decide if the Initiative is consistent with the present government's overall direction**

   First and foremost, the government will need to establish whether the Better Methods vision and culture agrees with the government's overall management philosophies, policies, and direction going forward. To take full advantage of the SAP investment to-date, Manitoba may need to change the way it has traditionally managed government programs, program resourcing, and system projects. For example, central government administration may have to forego intricate detail in departmental reporting. To complete the project will take a significant political, philosophical, and cost commitment, and a persevering belief in achieving the project's intended outcomes.

2. **Revitalize the project**

   The project needs to be re-commissioned and provided with new direction. It requires to carry "a new banner" with a revitalized methodology and the re-instatement of highly-disciplined risk management practices.

3. **"Refresh" project governance**

   Project governance needs a makeover. The government may want to create a new Steering Committee to oversee Better Methods. There needs to be an overall senior-level "champion" for the project, and an executive "sponsor" coming from the political level. The government and Better Methods management will need to ensure that an "owner" exists for each of the forward initiatives, with clearly defined accountabilities.

4. **Find a "home" for the project**

   The government needs to find a "home" for the Better Methods/SAP organization. Placing Better Methods under any of the traditional

government central administering authorities (such as the Department of Finance, Government Services, or the Office of Information Technology) has advantages and disadvantages. An advantage is that Better Methods would be more clearly associated with a recognized authority that already has a mandate and business planning structure. Certain stakeholders, however, may not view this new reporting relationship as having a sufficient enterprise-wide mandate commensurate with the Better Methods vision. The traditional role and mandate of the "owning" department may be seen by others as too restrictive and lacking the incentive and/or authority to evolve Better Methods/SAP to an enterprise-wide solution.

The government may instead want to consider the creation of a new portfolio specifically hosting all government corporate initiatives aimed at building technology infrastructure and promoting innovation that would contribute to the prosperity of the province. Better Methods could realistically belong under such a portfolio. The mandate assigned the portfolio would obviously need to ensure responsibility for responsiveness to meeting other departments' requirements and accountability for results.

5. Get stakeholders more involved

The User Group structure will need to be further developed and nurtured[16]. All stakeholders and business managers will need to be kept "engaged". Once business managers are given online access to SAP, SAP process "ownership" should be transferred to them as a means of making them more accountable in accomplishing process improvements. Business managers in departments should have ultimate responsibility for deriving the benefits. Central government will need to come up with a process and accountability for driving the benefits.

Opportunities exist for Treasury Board and the Provincial Auditor's Office (PAO) to play a more participatory role in SAP project initiatives going forward. Both Treasury Board and the PAO support such a role.

6. Stabilize the current system

Although it is important to keep the development momentum and bring deferred functionality back on stream, for the next little while the focus

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[16] *Users are currently represented through the following key forums: Departmental Implementation Teams (DIT's), human resource directors, executive financial officers, and the Comptrollership Taskforce.*

should be on system and operations stabilization, and less on development and business transformation. Stakeholders and the Better Methods team need to get "comfortable" first, then worry about business re-engineering.

7. **Develop accurate detailed forward plans and estimates**

Moving forward will require a detailed assessment of what needs to done including developing detailed plans and deriving detailed cost estimates commensurate with executing the plans.

8. **Address long-term staffing and knowledge needs**

Staffing will need to attain a critical mass level, complemented by management incentives to have key people stay with the project. Faster resource "brokering" is required to assure acquiring the right resources at the right time.

The Better Methods team needs to become much more self-sufficient and less reliant on external consultants. At the same time, they will need to continue to maintain good, positive working relationships with suppliers to the SAP project. A certain level of external consulting will continue to be required.

On-demand training is critical to meet departmental SAP staffing requirements. Better Methods needs to develop a proper training approach, plan, and resource the plan appropriately to cover areas such as better awareness of existing functionality, training on new functionality, curriculum development, re-organization of processes, and accommodating staff turnover.

VII. Realization of Benefits

Better Methods and DMI have been major foundation steps towards the "digitalization" of government as a means of realizing internal efficiencies and providing the government with strategic economic advantage. The SAP project, properly administered and concluded, could be viewed as having laid the groundwork for on-going performance improvement in government. These types of projects require a long-term view. SAP is only an enabling "tool". How the "tool" is used determines the quality of the work and the results that are produced.

The Better Methods Implementation Plan Blueprint of September 1997 estimated a five-year payback. The Blueprint indicated the project would begin generating a net benefit as early as 2002/03---five years from the start of Phase III implementation, based on a $33.2 million estimated cost. With the estimate revised to $56 million dollars, a new payback analysis (August 1998) was produced showing a discounted payback period of approximately 10 years. This revised analysis suggested that the following benefits could be achieved:

- Direct labour savings $5.8 million annually
- Non-labour savings through new processes $3.0 million annually
- Cost avoidance of Y2K refurbishment $13.2 million one-time
- Cost offset in need to replace legacy syst's $10 million over 5 years

The benefit analysis is based on a full-functionality replacement of existing systems, accompanied by a positive transformation of work processes. Full-functionality has not yet been enabled. Workflow transformation is still pending. Given the scale of additional expenditures incurred in accomplishing the system's implementation and the estimated cost of operating and expanding the system, the payback period will likely extend beyond the anticipated 5 to 10 years.

Recent discussions have centered on amortizing system capital investment for large enterprise systems of the SAP type over 15 years, as a more reasonable timeline in which to recoup benefits from very large investments.

As means of working towards achieving benefits, the government may want to consider:

- Eventually allocating SAP operating costs to the departments as an incentive for departments to optimize processes and use.
- Promoting greater inter-departmental sharing of SAP knowledge and experience.
- Investigating outsourcing the SAP operations centre.

The possibility exists that the government may not realize any measurable cost-savings with the project---at least not until significant progress has been made in broadening SAP functionality and attending to deferred workflow transformation projects.

Without a formal measurement evaluation structure and corresponding processes in place, it would be nearly impossible for the government to attribute derived benefits directly to Be.ter Methods.

VIII. Conclusion

Better Methods was founded on a clearly articulated and documented project vision and scope, endorsed by the most senior levels of government. Better Methods had a well-defined approach.

Although an important delivery milestone had been reached in April 1999, Better Methods did not accomplish all it set out to do within the prescribed time frame. Various stakeholders have received the deliverables to-date with mixed results.

The difficulties users have encountered may dissipate once departments have had more experience with SAP, more end-user training is provided, and once managers are able to access the reports they need and able to exercise some streamlining in the processes.

Start-up problems are common occurrences in initiatives as large as this SAP project. Manitoba's experience with the project to-date is not unique. Implementing integrated enterprise-wide systems is a "new way of doing things", a new approach to managing organizations and their programs. It is bound to have its challenges and "growing pains". To keep things in perspective, it is important to remember that the system is only about 10 months old. It will need time and concerted effort to grow and evolve to become fully robust.

The amount of work remaining to be done is still significant; much of it deferred to this year and the next two fiscal years.

Moving Forward

Except for exercising the alternative of implementing an entirely new system, the government's only other viable option is to continue to expand SAP functionality to current and new users. Returning to the system environment that existed pre-SAP is, in our opinion, not viable. Reverting to the eight legacy systems that SAP replaced would require significant retrofitting efforts across government, undoing much of the positive process changes that SAP introduced, and removing the potential of realizing significant process improvements. This would be a major step backward for the government.

Better Methods should be provided with funding for the balance of this year to help stabilize the deployed SAP system, successfully conclude calendar and fiscal year-end processing, and provide only **absolutely-essential** custom reports to program managers. Budgeted and additional funds requested for this fiscal year include $11 million in capital and $4.2 million in operating costs, for a total of approximately $15 million.

Before moving forward with Better Methods/SAP, however, this project will require addressing fundamental governance and project management requirements, together

with the application of much more intense management and activity scrutiny. The project needs to be re-commissioned, re-vitalized, and re-directed with a new promotional "banner" and new sponsorship. The overall project objectives, scope, and direction should be re-visited. New project priorities should be established. The project needs to be adequately placed ("housed") organizationally. Formal project and risk management methodologies must be re-instituted. More thorough and comprehensive definition of sub-project deliverables and estimating of activities, efforts, and costs need to be produced and reviewed by senior government officials.

Although information technology is a significant part of the project, Better Methods is primarily a *business transformation* project. It requires effective process re-design, organizational re-alignment, and change management leadership, as much as technology leadership.

The annual cost of operating SAP is estimated at between $8 and $10 million. This amount may be streamlined in future years as system use and operating knowledge are optimized.